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Educational News and Editorial Comment

THE NATIONAL CONFERENCE ON THE FINANCING OF EDUCATION

A conference on the financing of education was held at Columbia University for two weeks beginning July 31. The participants, numbering almost thirty persons from all sections of the country, included both practical school executives and specialists in the study of school finance, taxation, and public finance. The conference was held under the auspices of the Joint Commission on the Emergency in Education of the National Education Association and the Department of Superintendence. The activities of this commission have been reported in earlier issues of the *School Review*. Professor John K. Norton, chairman of the commission, served also as chairman of this conference. In the interests of reporting the outcome of the deliberations of the conference in the space available, we refrain from presenting the list of participants, whose names are of a standing to inspire confidence in the outcome.

It was the aim of the conference to distil, from the experience of the past two decades in school support and out of the related researches that have been made, a "charter" of school finance and "principal recommendations" in the field. Both the charter and the

recommendations are here reproduced. For the discussion amplifying and supporting these documents, readers are referred to the complete report of the conference, which is destined both to exercise an important influence on the trend of school support in the present emergency and to guide the permanent program of school finance for years to come. All who are friendly to public education should familiarize themselves with these statements. The Joint Commission on the Emergency in Education plans to conduct a series of regional conferences to stimulate nation-wide consideration of the charter and the recommendations. Following is the charter.

Essentials of a Modern School-Finance Program

Believing that the financing of schools is a paramount public concern, basic to the present and future welfare of our democracy, the following program is offered for action by the American people.

Educational Opportunity

Universal education.—Funds to provide every child and youth a complete educational opportunity from early childhood to the age at which employment is possible and socially desirable. This right to be preserved regardless of residence, race, or economic status and to constitute an inalienable claim on the resources of local, state, and national governments.

Lifelong learning.—Educational opportunities at public expense for every adult whenever such opportunities are required in the public interest.

Effective teaching.—In every classroom competent teachers maintained at an economic level which will secure a high quality of socially motivated and broadly trained professional service.

Adequate Revenues

Equitable taxation.—For the adequate support of all governmental activities, including the schools, a stable, varied, and flexible tax system, providing for a just sharing of the cost of government by all members of the community.

Public information.—Accurate, intelligible, and frequent reports to taxpayers and the public on the management of the school money so that complete understanding and constructive attitudes with respect to school taxes and services may prevail.

Constructive Economy

School board independence.—In every school system a board of education responsive to the will of the whole people and free to adopt and carry out truly efficient and economical financial policies for the schools.

Economical administration.—A uniform and continuous policy of honest, economical, and productive spending of all school moneys.

Local Management

Adequate local units.—In every community trained educational leadership and other services secured through a local unit of school administration large enough to make such services financially possible and desirable.

Community initiative.—For every school district the right to offer its children an education superior to state minimum standards and to seek and develop new methods intended to improve the work of the schools.

State Responsibility

Equalization of educational opportunity.—For every school district sufficient financial support from the state to permit the maintenance of an acceptable state minimum program of education and to relieve the local property tax when this tax, upon which local initiative depends, is carrying an unfair share of the cost of government.

Professional leadership.—Competent leadership in every state department of education so that reasonable minimum financial standards may be established and educational progress encouraged throughout the state.

Fiscal planning.—In every state a long-time financial plan for public education, comprehensive in scope, based on experienced judgment and objective data, co-operatively developed, continually subject to review and revision, and reflecting faithfully the broad educational policy of the people.

National Interest

Open schools.—For every child deprived of education by emergency conditions beyond the control of his own community and state, immediate restoration of these rights through assistance from the federal government to the state concerned.

Federal support.—Sufficient federal support for the schools of the several states to protect the nation's interest in an educated citizenship, without federal control over state and local educational policies.

If America is to recover prosperity and persist as a democratic nation, these essentials must be provided.

The principal recommendations may be seen to attack the whole problem of school finance basically and comprehensively.

The Educational Enterprise To Be Financed

1. Restate the aims of the school in the light of modern social and economic conditions.
2. Provide suitable education at public expense and require attendance from early childhood until employment is advisable and obtainable.
3. When necessary, provide livelihood as well as educational facilities for youth until society is prepared to offer employment.
4. Provide additional educational facilities for selected individuals and groups when the common welfare can be enhanced thereby.

5. Recognize publicly supported institutions of higher education as an essential and integral part of public education.

6. Provide whatever educational facilities for adults will best serve the welfare of society.

7. Give equitable consideration to the educational needs of all races.

8. Rehabilitate through public education the workers forced from a particular occupation.

9. Maintain a level of economic compensation for teachers appropriate to the importance of their work.

10. Employ a sufficient school personnel to permit considerate attention to the individual needs of each child.

11. Recognize research in the various lines of social, political, and economic endeavor as a legitimate and vital part of the work of public education.

Financing a Minimum or Foundation Program of Education

1. Equalize educational opportunity and the cost of its support up to a reasonably satisfactory minimum from state funds.

2. Determine through a study of actual conditions and practice within the state the scope and character of a proper minimum or foundation program.

3. Develop a measure of educational need which will assure that the foundation program will purchase substantially the same amount and quality of education in every school district.

4. Include a local contribution, based on uniform effort by all localities, as well as state support, in financing the foundation program.

5. Do not reduce existing state support when the state undertakes the financing of the foundation program.

6. Consider the foundation program as one to be raised from time to time toward a more adequate level.

7. Take into account non-resident tuition, transportation of pupils, and capital outlay in determining the cost of the foundation program.

8. Interpret the foundation program to the people clearly and effectively.

The Organization of Local School Districts and the Safeguarding of Local Initiative

1. Reorganize local units of school administration so as to make available in an economical manner to all the youth of that unit educational facilities that offer throughout the elementary and secondary levels complete educational opportunities.

2. Propose legislation pertaining to reorganization in strict conformity with the state constitution and in harmony with court decisions.

3. Make state-wide, or at least area-wide, surveys to aid in the reorganization of local units.

4. Enlarge administrative units and so organize them that centralization of responsibility and authority together with competent local leadership may be provided.

5. Take into account economic, social, and topographical factors in reorganizing local administrative units.

6. Organize school districts so as to bring about effective co-ordination between elementary and secondary schools.

7. Create, when possible, administrative units with a school population of ten thousand or more children.

8. Create, when possible, in rural districts, administrative units having at least fifteen hundred children.

9. If school districts are organized coterminous with other existing political subdivisions, when possible, use those with populations of at least seventy-five hundred.

10. Keep the boundaries and areas of local units subject to change as needs arise.

11. Make local initiative possible by providing an adequate program of state school support, thus releasing local tax resources which may be used to enrich and extend the foundation program.

12. Avoid legislation imposing local tax limitations or other restrictions tending to render the schools ineffective.

13. Encourage local school boards to exercise their full prerogatives as representatives of the people in controlling school affairs, and discourage surrender of authority to extra-governmental agencies.

Taxes for School Support

1. Accord state school support appropriate consideration in the allocation of state revenues for governmental purposes.

2. Consider the foundation essentials of educational service as a part of the core of governmental functions regarded as a fixed charge upon the community.

3. Develop a balanced system of taxation to spread the tax load more equitably.

4. Discontinue undue dependence on the property tax or any single source of revenue.

5. Transfer a larger part of school support from local to state governments.

6. Borrow funds necessary for current operation of schools against the security of delinquent taxes where such borrowing is constitutionally and financially possible.

7. Consider the borrowing of funds for the support of essential public services a sound economic procedure in a depression period and provide for the rapid retirement of the resulting debt as business conditions improve.

8. Examine the causes and seek the remedies for tax delinquency.

9. Develop more effective systems of tax administration and collection.

10. Claim earmarked funds for education as a matter of expediency if the earmarking of funds for other purposes makes more desirable methods of stabilizing educational support impractical.

The State and Constructive Economies in Education

1. Safeguard all school funds, whether endowments or current funds, through proper selection of depositories and other methods.
2. Establish such times and methods for distributing state school funds as will best meet the financial needs of the local school system.
3. Promote economical and efficient budgetary procedure in local school districts.
4. Put into practice a comprehensive system of accounting and auditing.
5. Set up centers of instruction or develop other methods by which accounting procedures can be improved and unified.
6. Centralize all internal accounting in each local school system.
7. Provide for an effective annual audit in each administrative unit.
8. Provide a competent instructional staff in order to guarantee the educational efficiency which is fundamental to true economy.
9. Provide adequate research and supervisory services as a safeguard in maintaining instructional efficiency and economy.
10. Set up specifications to assist local districts in economically purchasing school supplies, equipment, and fuel.
11. Provide for adequate training of janitors, custodians, engineers, and other employees responsible for school-building operation and maintenance.
12. Make studies that will help in keeping costs of transportation of pupils to lowest level consistent with efficiency, comfort, and safety.
13. Study the possibilities of economies in insurance costs.
14. Develop budget forms, contractual documents, and standards for specifications of school buildings.
15. Require a complete financial report on the completion of every school building.
16. Improve state and municipal building codes as these apply to school buildings.
17. Set up methods in each state to supervise the issue and marketing of local school bonds.

The Federal Government and Education

1. Provide funds from the federal government during the emergency to restore educational opportunities where denied or greatly restricted by emergency economic conditions.
2. Construct needed school buildings now, securing federal funds under the provisions of the National Industrial Recovery Act.
3. Develop a plan for federal participation in the financing of education to enable all states to support a suitable foundation education for all children.

AMERICAN EDUCATION WEEK IN THE PRESENT EMERGENCY

In a little more than a month, from November 6 to 12, will be observed the thirteenth annual American Education Week. The

three sponsors are, as formerly, the National Education Association, the United States Office of Education, and the American Legion. This year the observance is in charge of a board of strategy, the Joint Commission on the Emergency in Education. The theme for the program is most appropriate—"Meeting the Emergency in Education." The topics suggested for the day-by-day programs are as follows: Monday, November 6—the increased responsibilities of the schools; Tuesday, November 7—financial support of the schools; Wednesday, November 8—what citizens may do to protect the schools; Thursday, November 9—home and school co-operation; Friday, November 10—the schools and reconstruction; Saturday, November 11—the schools and loyalty to the nation; Sunday, November 12—safeguarding character essentials. The Division of Publications of the National Education Association has again published helps for planning observance of the week—a handbook for schools and all workers, materials for use in the classroom, booklets for distribution to homes, and gummed stickers for correspondence. A "dollar packet," prepared for those who desire a complete set of material, is recommended by the Division of Publications as "the most popular unit of material." The current year, of all years, is a timely one in which to arrange for appropriate and impressive observance of American Education Week.

SUPERVISING CLASS ACTIVITIES IN A JUNIOR HIGH SCHOOL LIBRARY

William A. King, principal of the James Monroe Junior High School in Seattle, has submitted to the *School Review* a brief report on a plan developed in that school for increasing the usefulness of the library. The exposition of the working-out of the plan is prefaced by a description of the library, from which the following quotation is made.

> The range and variety of books and magazines encourage the fullest possible use of the library. The materials have been selected by children's librarians from the Seattle Public Library and by representatives from the public schools.
>
> For the most part, the books are not technical nor highly specialized but are of a general type. There is a close balance between fiction and factual material. The books in the non-fiction group have been selected so that many subjects can be correlated. Books of poetry offer the teacher of history material which will coincide with various periods of history. The literature teacher finds works

of the modern as well as the older poets. Books of travel not only support extensive correlation in the geography classes but also satisfy the desires of many children for this type of pleasure reading. Biography, civics, and sciences are well represented on the shelves. The fiction books, including many books with historical background, offer a wide range of interest for both boys and girls. Fine editions are invaluable in introducing the old classics to the children. A standard list of magazines suited to age and interests adds its part to the wealth of materials.

Typical contacts made through the library are suggested by the following statement of the school librarian.

"In making illustrated maps, the art teacher depended on the library for maps as well as for little figures and illustrations to place on them. For the study of architecture the library supplied pictures of the various types, as well as materials and descriptions of buildings. The science department was developing a unit which created a demand for books on animals. While interest was high, a special shelf of animal stories based on scientific facts was provided for their use. In a similar way, collections of reference books and other resources have been made available for units of work in social science, music, and industrial arts."

In keeping with modern educational practice and the specific aims of the junior high school, the library is organized and administered with the idea of making it a center of the intellectual life of the school. All its resources are available to the pupils from eight in the morning until four o'clock in the afternoon. Browsing, free reading, and other self-directed activities are given every possible encouragement.

The outline of the plan of supervision was prepared after the teachers of English and social science in the school had had an opportunity to submit their reactions to an inquiry form with the following introduction.

Increasing use is being made of our library facilities by whole classes under the immediate supervision of their teachers. This practice suggests that a bulletin on the supervision of class activities in the library should prove helpful. It is planned to request a committee of our teachers to prepare such a bulletin.

Will you please indicate below your procedures in supervising class activities in the library in order to provide practical suggestions for the committee.

Following are probably some of the more vital factors to have in mind:

1. Preparation of class for the work to be done.
2. Intelligent use of time while in the library.
3. Proper use of library materials.
4. Library technique.
5. Reading habits.
6. Evaluation of the work accomplished.

A committee appointed for the purpose made a careful study of the reports on the blank form and, on the basis of the recommendations, prepared a bulletin dealing with the supervision of class activities in the library. The bulletin contained the following outline.

1. Preparation of class.
   a) Lesson should be motivated so as to create a desire for further reading and problem-solving.
   b) Definite assignment should be given individual, group, or class. The pupil who understands the assignment and knows what is expected of him during this period will have a greater interest in accepting the challenge and a keener desire to use each minute of his time wisely.
   c) Good routine habits should be developed.
      (1) Passing to the library.
      (2) Taking necessary supplies.
   d) Directions should be accurate and specific. Pupils should know:
      (1) Books and materials at their disposal.
      (2) All library rules and regulations.
   e) Approved library technique should be practiced. Pupils have been taught:
      (1) How to use the card catalogue: the three kinds of cards—title, author, subject.
      (2) How to find on the shelves the books that are needed.
      (3) How to use alphabetical arrangement in certain reference books.
      (4) How to use bibliography intelligently.
      (5) How to use footnotes and supplementary notes as aids in comprehending material.
      (6) How to interpret pictures, graphs, and tables.
      (7) How to get main ideas or how to skim to get answers to definite questions or problems.
2. Teacher's responsibility.
   a) To be familiar with library rules.
   b) To be familiar with available material for work to be done.
   c) To study individual pupils during library period. Make profile study of individual's use of the period. Observe reading habits.
   d) To arrange seating.
   e) To see that proper care is taken of materials.
   f) To contribute to general library atmosphere.
   g) To follow up "Library Lessons" given by the librarian.
   h) To provide class with outline when it is thought advisable.
   i) To attempt to appeal to special interests, particularly in an advanced group where a greater challenge is needed.
3. Pupil's responsibility.
   a) Intelligent use of time.

b) Proper use of library materials.
c) A definite plan for work.
d) Resourcefulness.
e) Good citizenship.

4. Evaluation of work accomplished.
a) Class discussion.
b) Oral and written reports. Individual pupils required to report to class definite facts or statements and source of those facts. Persons giving reports required to prepare two or three questions to ask class at the close of the report.
c) Bibliographies on certain topics. The stronger pupils should be encouraged to prepare these.
d) Checks to see if pupils read for thought. Have they taken brief notes? An outline is a device for studying, planning, reviewing in English, history, science, and like subjects.
e) High standards of attainment. Pupils set these up as challenges to superior achievement.

Commenting on the outline, Principal King says:

In this outline the term "class" refers to regular groups in any subject. Up to the capacity of the library (120) teachers of literature, science, history, etc., may accompany their classes to the library for varying periods of reference reading or other activity.

It is believed that the experiences gained by the pupil in the procedures of the outline are quite in keeping with sound principles of education. The preparation suggests motivation, definiteness of assignment, and the power and will of self-direction in a modern school library. Teacher responsibility implies an appreciation of the purpose and the service of the library. Finally, the evaluation of the work accomplished suggests the importance of requiring the pupil to give an accurate and adequate account of his efforts in the library.

THE COMMISSION ON THE RELATION OF SCHOOL AND COLLEGE LAUNCHES ITS PROJECT

The *School Review* has previously given space to the proposal of the Commission on the Relation of School and College of the Progressive Education Association to conduct a large-scale experiment looking toward the improvement of the secondary-school curriculum and an accompanying emancipation of the lower school with respect to its curriculum from the domination of the college. According to a statement of Wilford M. Aikin, chairman of the commission, appearing in an early summer issue of the *New York Times*, the proposal has materialized into a plan which was to be launched at the

opening of the current school year. We quote the major portion of the published statement.

The plan provides that a small group of secondary schools will be set free by the colleges to engage in experimental study of the work of the secondary school, and the colleges agree to accept students from these schools for a period of five years, beginning in 1936, without regard to the course and unit requirements now generally in force for all students and without further examination.

Selection of candidates from these schools will be based, instead, upon the statement of the principal of the school and a carefully recorded history of the student's school life and of his activities and interests, including results of various types of examinations and other evidence of the quality and quantity of the candidate's work, also scores on scholastic-aptitude, achievement, and other diagnostic tests given by the schools during the secondary-school course.

More than two hundred American colleges and universities have given official approval of the plan and assurance of co-operation. Included in the list are leading representatives of all types of institutions of higher learning. We shall have the co-operation of large universities, both state supported and privately endowed; many of the strong small colleges; women's colleges including all but one of the older eastern colleges for women; and many of the men's colleges, although two or three of the men's colleges which require examinations of all candidates have not yet agreed to waive examinations. All sections of the United States are well represented.

It is obviously necessary that the number of secondary schools included in the study should be limited and that they should be those especially well qualified to lead in the improvement of the work of the secondary school. The selection of the schools and the supervision and guidance of the experiment throughout the eight years proposed for its existence are responsibilities resting upon the directing committee which was set up by the commission a year ago. . . . .

During this last year this committee has sought diligently throughout the country to find strong secondary schools which have demonstrated their ability to prepare students successfully for college under present conditions and are now ready to undertake important studies of their own work for the purpose of enriching and improving the secondary-school curriculum and making it more significant and worth while to all boys and girls, especially to those who are preparing for college.

For this purpose approximately 250 schools were suggested by educational leaders in all parts of the United States. From this list the committee has chosen, after careful investigation, the following schools: High School, Altoona, Pennsylvania; The Baldwin School, Bryn Mawr, Pennsylvania; Beaver Country Day School, Chestnut Hill, Massachusetts; Bronxville High School, Bronxville, New York; Cheltenham Township High School, Elkins Park, Pennsylvania; Chicago University High School, Chicago; Dalton School, New York City; Den-

ver High Schools, Denver, Colorado; Fieldston School, New York City; Francis Parker School, Chicago; Germantown Friends' School, Philadelphia, Pennsylvania; George School, George School, Pennsylvania; Horace Mann School for Girls, New York City; John Burroughs School, St. Louis County, Missouri; Lincoln School, New York City; Milton Academy, Milton, Massachusetts; New Trier Township High School, Winnetka, Illinois; North Shore Country Day School, Winnetka, Illinois; Ohio State University Demonstration School, Columbus, Ohio; Pelham Memorial High School, Pelham, New York; Roosevelt High School, Des Moines, Iowa; Shaker Heights High School, Shaker Heights, Ohio; Tower Hill School, Wilmington, Delaware; Tulsa High School, Tulsa, Oklahoma; Radnor Township High School, Wayne, Pennsylvania; Windsor School, Boston, Massachusetts; Wisconsin High School, Madison, Wisconsin.

The committee sought to make the list truly representative of the whole range of American secondary education, and it will be observed that many different types of schools have been selected. There are both large and small public high schools. There are private schools of the "progressive" country-day type, coeducational schools, boarding schools for girls, boarding schools for boys. The group is almost, but not quite, complete. One or two more eastern boarding schools for boys and two or three schools from the West and South will be added.

Before accepting any school, the directing committee required its officers to submit plans for curriculum revision. Of the proposed changes the following indications can be given: In most instances social studies, science, literature, and the arts will be moved into the foreground of the picture with substantial enrichment of factual material. In a number of cases a core curriculum will be established centering in some one general field of knowledge, usually the social studies, with which the work in other fields will be integrated.

In practically all the plans there will be increased correlation and interweaving of subjects; special encouragement of independent, self-directed study; enhanced opportunity for creative expression through writing, dramatics, the graphic and plastic arts, music, and school and community affairs; and greatly augmented attention to individual educational guidance.

Next September each school will inaugurate its new work, beginning with the class which enters college three years later in September, 1936. Each school will keep a full and complete record of each student's achievements and development so that both school and college may act more intelligently when the change from school to college takes place. A special committee on records is now at work. . . . .

There will be frequent conferences among the schools themselves and they will have the guidance and counsel of the directing committee throughout the eight-year period. Under the supervision of this committee the schools and colleges will be brought close together for the study and guidance of each student so that his school and college career may have unity, coherence, and pattern.

It is proposed that the overemphasis which is now placed upon the mere act of getting into college shall be removed and that the unity of the whole educational process shall take its proper place in the student's consciousness and in the aim of both school and college.

Through the changes they are now free to make, these schools hope to become more effective in helping young people to develop the insight, the powers, and the self-direction necessary for resourceful and constructive living. They wish to work toward a type of secondary education which will be flexible, responsive to changing needs, and clearly based upon an understanding of young people as well as an understanding of the qualities needed in adult life.

At least two queries may arise as one reads the description of the plan. One of these relates to the relative proportions of public and private schools. The private institutions in the list outnumber the public schools by two to one. By contrast, the public high schools of the country outnumber private schools by about ten to one. The explanation of the discrepancy must be in part that those in charge of private schools, because of the emphasis of their constituency on preparation for college, have been more conscious of the strictures on the curriculum imposed by the requirements for admission to the colleges. The influence of these strictures is reflected in the much greater emphasis given the traditional subjects in private high schools than in public high schools. The other query centers around the exact character of the changes in the curriculum that are being worked out in the participating schools. These are meagerly described in the statement, probably owing to limitations of space. It is to be hoped that for each of the schools represented the changes will be clearly defined and indubitably constructive.

NEW COURSE OUTLINES IN PENNSYLVANIA

The first publications growing out of the general program of curriculum revision in Pennsylvania have made their appearance. This program was organized under the direction of William H. Bristow, deputy superintendent of the Department of Public Instruction. The bulletins at hand contain the courses in the social studies in the junior high school grades and the courses in science for senior high schools. All the courses presented have been organized on the unit plan. The sequence of courses in the social studies for Grades VII, VIII, and IX, includes, respectively, *Backgrounds of American Life*,

History of the United States, and *Citizenship*. This sequence is intended to be suitable for these grades in both reorganized and unreorganized systems. Some notion of the unitary organization as worked out may be gained from the titles of the ten units in the course first named: "Prehistoric Times," "Oriental Civilizations," "Greek Civilization," "Roman Civilization," "Medieval Times," "A New Day for Civilization," "The Beginning of American History," "The Growth of Autocratic Governments," "The Struggle for Political Freedom," and "Changes Brought About by the Industrial Revolution." The course for Grade IX distributes the seventeen units of which it is composed to four main parts, namely, "The Citizen in the Life of the Community," "The Citizen and His Government," "The Citizen in the World of Work," and "A Summary and Forward Look." The reader will note that the third part (composed of five units) falls within the scope of what is often called "vocational civics." Special interest may attach to the two units of the fourth part, which bear the names "Our Rights and Duties as Citizens" and "How Progress May Come."

The bulletin on science contains course outlines for biology, physics, and chemistry. The first of these courses is planned for Grade X and the two remaining courses for Grades XI or XII. The Foreword to this bulletin, prepared by James N. Rule, superintendent of public instruction, contains some interesting data concerning the enrolments in the courses in science in the senior high school grades (X, XI, and XII) in the state. The enrolment in all courses in science in these three grades in 1930–31 is reported to have been 116,362, which is 56.9 per cent of the total enrolment in the same grades. In the order of numerical importance, the enrolments in the different courses were: biology, 50,876; chemistry, 28,835; physics, 25,649; botany, 4,283; general science, 3,831; zoölogy, 2,547; and geology, 341. Separate courses in botany and zoölogy have practically given way to the course in general biology, and this composite course has outdistanced the courses in chemistry and physics.

THE SYSTEMATIC ORGANIZATION OF COURSES IN EDUCATION[1]

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Departments of education have passed in recent years through a period of great expansion. The personnel of these departments has been multiplied, and the attendance of students on courses in education has grown, with a rapidity and to an extent almost without precedent in academic history. Naturally, the prosperity which has come to departments of education has aroused the antagonism of many members of the academic fraternity. Adverse criticisms have been expressed with regard to the number and content of courses in education. Members of departments of education have been accused of using political influence in order to herd students into their classrooms against the wishes of the students and in opposition to the judgments of instructors in other departments. Courses in education have been described as pitifully thin in content and as so numerous and diversified in their titles that they must be thought of as examples of indefensible inflation.

It would be possible easily to dispose of many of the charges which are lodged against departments of education. It can be said that education as a new academic discipline has been experimenting with many different courses in the effort to arrive at the formulation of its contents which will be most useful to students. It can be pointed out that the process of evolving techniques of inquiry and of securing reliable information in a field where relations are as complicated as they are in education is a long and arduous task. It can be asserted without fear of contradiction that academic institutions are in need of scientific guidance since most of their practices have developed in a casual fashion and are often of doubtful validity. If the findings of scientific studies of education are right even in a

[1] Address delivered before the National Society of College Teachers of Education at the Minneapolis meeting, 1933.

small number of cases, the contributions of such studies to social economy will justify large tolerance of any inadequacies of which departments of education may be guilty.

While the temptation is strong to be diverted from constructive work in the field of education in the effort to answer the unfriendly comments of those who are critical of departments of education, it is undoubtedly a far wiser course for those who represent education to be their own most drastic critics. If those who are responsible for courses in education can anticipate everything unfavorable that can be said about their work, if they can cultivate the attitude that all criticisms may be turned into stimulations for improvement, they will promote the science of education more than they would be likely to do if they escaped entirely unfavorable criticism.

It is in the spirit of self-criticism that this paper is prepared. The main thesis which will be defended is that the science of education has now matured to the point where it can properly attempt a resynthesis of its contents and a reconstruction of the program which it administers to those who are to be educated by its courses.

In order to defend the thesis proposed, let us consider the three subjects which for a long time constituted the curriculum in education. These three subjects are history of education, educational psychology, and methods of teaching.

The history of education as it was originally formulated was a history of educational theory with a few incidental references to educational practices about which information was easily available. Those of us who secured our training half a generation ago remember that one of the books very commonly used in courses in the history of education was Quick's *Essays on Educational Reformers*. We learned a great deal about the reforms proposed but little about what preceded the demands for reform and still less about what followed the advocacy of reform by individual leaders. We read Rousseau's *Émile* and were told that Rousseau's writings were of large influence, but no one ever believed for a moment that schools were to be abandoned for life in the country with a tutor. We read Plato's theory of the state but were not made acquainted with the industrial changes which brought the American high school into existence.

If the history of education was a subject only loosely related to school practices, educational psychology was even more abstract and academic. In fact, educational psychology did not really come into existence until a few years ago. When Meumann wrote his *Vorlesungen* in 1907, he made the comment that educational psychology recorded a few facts about infants and borrowed certain generalizations from adult psychology but that a science of the mental processes of school children did not exist. It has always been my contention that, until long and laborious investigations have been completed revealing the series of changes through which children pass in learning to read and write and use number, it is futile to talk about an educational psychology. I believe we are still laboring in most books on educational psychology under the handicap of a premature effort to formulate a science before the necessary empirical materials have been made available. What Meumann said in 1907 is to a large extent true today. We have long discussions of the sucking behavior of infants and elaborate expositions of the learning curves of adult students learning Russian or tossing balls or practicing on the typewriter, but we have until very recently been painfully lacking in knowledge of the mental processes of children when they try to add columns of figures or try to acquire the ability to form scientific inferences.

There are two striking facts about educational psychology which, in my judgment, confirm what I have been saying. One of these is a positive fact; the other is negative. The positive fact is that a host of new books on educational psychology have appeared in the past three years. Evidently the books which followed the older formulas are recognized as unsatisfactory. Authors are introducing new fundamental concepts and are illustrating their discussions with concrete examples. Even where the older formulas are adhered to, there is an evident disposition to soften the formalism and abstractness of the treatment.

The negative fact about educational psychology is that students of the new subject of educational sociology are asking for attention on the ground that their approach to the study of human nature is more promising than the psychological approach. Personally, I am wholly unconvinced by the writings of the educational sociologists. After a careful examination of their output, I am sure that it is just to say

that they are, in the main, social psychologists. As social psychologists, they are making important contributions to education. Their contributions will certainly serve to stimulate a broader and more inclusive study of mental processes. The sociologists are doubtless right in their contention that education is not a process involving isolated individuals. It is a process in which the individual becomes a part of a social group. That social psychology will render educational psychology useless, I do not believe. That individual psychology and social psychology will be synthesized into a new and productive branch of the science of education seems to me clear. I find in the facts which have been presented full confirmation of the statement made earlier in this paper that the science of education is passing into a new stage of maturity—one in which there will be new syntheses of its contents.

The third traditional subject—that which has been known under the title "methods of teaching"—is difficult to defend. It is difficult to defend because there can never be method without content. So long as departments of education and subject-matter departments are alien to each other, educational methods will be inadequately taught. It is unfortunate that departments of education have taken the responsibility for courses in educational methods to such an extent that subject-matter departments have felt justified in neglecting the treatment of methods in their fields. It is one of the most indefensible inadequacies of the modern educational system that teachers of subject-matter courses have left their students to adopt such methods as they chance upon through imitation or through purely personal caprice.

If there is one synthesis which needs to be effected more than another in the interest of competent educational practice, it is the synthesis of subject matter and method. Members of departments of education have nothing to lose and much to gain by promoting this synthesis. If all the subject-matter departments in teacher-training institutions could be induced to give attention to methods of teaching, great gain would come to schools of all grades. Departments of education should not try to carry the load of giving instruction in methods but should diligently seek to induce the subject-matter departments to shoulder the responsibility which is emphatically theirs.

Beyond the three traditional courses in history of education, educational psychology, and methods, there have been developed in recent years courses in administration and courses in scientific techniques, such as the construction of tests and the use of statistics.

Courses in administration have been divided and subdivided until now their name is Legion. There are courses in city-school administration, state-school administration, rural-school administration, administration of school finance, administration of teachers, of pupils, of buildings, of janitors, of institutions of various types, and of branches of each of these institutions.

I have tried, as one who is vitally interested in the science of education, to keep myself oriented in the literature of school administration. It is my deliberate judgment that many of the courses in administration are very limited in content and that such content as they have is dogmatic rather than scientifically verified or evaluated.

The instruction which is given by departments of education in scientific techniques is open, I believe, to the objection that it concentrates attention far too much on statistical techniques. This statement is not intended to imply for a moment that statistical techniques are not valuable. The statement is made rather to make as emphatic as possible the idea that analytical methods of scientific study of educational problems are far more fruitful, and have proved themselves to be so, than are statistical methods, which obscure the facts of individual development through reliance on averages and abstract calculations.

The foregoing comments on the most common and important lines of work pursued in departments of education have been made not at all with the expectation that they will command universal acceptance but for the purpose of preparing the way for certain positive proposals which seem to be justified by the present state of the science of education.

I propose to this association that it organize a series of studies and experiments designed to systematize the work in education. There are numerous teachers' colleges and departments of education which would be enabled to make large contributions to the subject of education and would at the same time greatly enhance the value of their own teaching of students if they could be provided with the opportunity of co-operative reconstruction of their instruction in educa-

tion. The proposal which I have to make does not assume that all the members of this association will adopt the same plan. My proposal is that groups of institutions which are interested in trying Plan A unite in perfecting that plan. Other institutions which prefer Plan B should unite in working on that plan. Each plan should be carried on co-operatively, and the results of each should be recorded and evaluated.

In order to illustrate what is meant by a plan of instruction, let me suggest a program which might be followed. It is the plan that the department with which I am connected is working out in detail. It is by no means the only plan which might be suggested. Such as it is, it is under way and seeks the co-operation of teachers of education to whom it appeals as promising.

The plan which is here offered as a concrete illustration of a program which may be undertaken provides as its first or introductory course a course which frankly submerges the individual interests of the teacher in training and emphasizes the concept of the school as a social institution deriving its character and its sanctions from the general social order. In our department we call this course "The American System of Education." The course opens with a discussion of the contrasting types of society which appear in Europe and the United States. The dual school systems of Europe and the unit school system of this country are discussed as illustrations of the influence of social concepts on schools. The second line of discussion in this course treats of the changes in the schools of this country which have resulted from social changes, especially during the past fifty years. From this point on, the course gradually comes to a discussion of the individual classroom through descriptions of governmental controls, institutional forms, and the internal administrative and supervisory organization of school systems.

The purpose of this introductory course is to give the prospective teacher an understanding of the school system of which he is to be a part. The course is intended to open the way to a study of all the social sciences so that the teacher in training may be led to interest himself in sociology, economics, and political science. The justification for attempting to cultivate this broad view of the social order is the fact that up to this time teachers have shown a lamentable

lack of understanding of their duties as servants of society. They have had a microscopic view of their tasks.

The second course which our department recommends to its students is a course in educational psychology. Possibly the discussion of psychology in an earlier section of this paper will indicate in sufficient detail the nature of this course. The course aims to show that language, writing, the number system, literature, and the sciences are products of human intellectual co-operation. The principles of social psychology are presented and amplified. After the psychological character of the outstanding intellectual achievements of the race is described, the traits of individuals are analyzed in the effort to make possible an understanding of the steps by which an immature human being adjusts himself to his social environment. A synthesis of social psychology and individual psychology is thus presented as the basis for an understanding of all that takes place in schools.

The next course is entitled "The School in the Social Order." It is a substitute for the older, formal course in the history of education. Instead of giving a chronological account of the writings on education, this course selects illuminating examples of the interplay of social and educational forces. It keeps alive and makes vivid the details of the concept which the first two courses present, namely, the concept that the school is always an expression of society's ambitions for its young people.

This course on the school and the social order can be given in much less compass than could an exhaustive history of education, because it makes no pretense of chronological completeness. Its purpose is to prepare teachers in training and students of the science of education to use the historical method in interpreting current educational movements.

The fourth course recommended by our department is a course in scientific techniques of educational inquiry. Examples are given of the way in which laboratory studies, documentary studies, and statistical studies have contributed to progress in educational organization. The course is intended to establish in the minds of students the idea that the only way to arrive at valid solutions of educational problems is through systematic studies. The way is pointed out of

checking opinion and substituting verifiable conclusions about educational procedures for tradition or personal opinion.

The fifth course is on the principles of school administration and school organization. Here, as in the other courses, the effort is made to establish general points of view which will make students independent in their consideration of particular situations. Examples are presented and analyzed to illustrate successful and unsuccessful modes of organizing schools and classrooms. This course is formulated with a view to interesting not only those who plan to become administrators but also those who are to be subjected as teachers to supervision by administrative officers. It is not taken by all students.

Finally, the last phase of the general program to which the group of fundamental courses here described belongs deals with classroom procedures. Certain courses are provided in special methods. The instructors who conduct these special-methods courses aim to include enough general methodology to supply what is often presented in courses in general methods. The advantage of teaching methods in courses dealing with special fields is that the principles of method can be made very concrete.

Our department does not limit its treatment of methods to special-methods courses. It offers two courses which deal in a general way with the problems of teaching. These general courses have certain advantages in that they prepare students for the kinds of teaching positions which are very common, namely, those in which more than one subject is taught.

It is not at all certain that our department will ever limit its treatment of methods to any single kind of course. Personally, I favor the conduct of methods courses by subject-matter specialists.

The foregoing plan does not include, it will be noted, some of the familiar titles. We have not used the titles "principles of education" and "philosophy of education" because we believe that both of those titles are so broad and indefinite that they remove the incentive for the development of a rich and definite body of educational information. We believe that content of a perfectly definite type is requisite to a sound course in education quite as much as to a sound course in economics or political science.

The plan can be adjusted to the needs of elementary or advanced

students. Elementary students may omit the courses on administration and scientific techniques. They may study fewer selected topics in each course. Advanced students, on the other hand, may extend their studies in each of the courses by independent readings in educational literature.

The plan supplies a sound and broad foundation for a graduate program of readings and research. In its elementary form, it may be administered within the compass of twelve to fifteen semester hours.

The major virtue of the plan is that it provides a body of material which is professional in the best sense of that term. It departs from some of the traditions of teacher-training institutions in that it is not prescriptive and mechanical. It puts the responsibility for working out detailed policies in the classroom on a trained individual who has been taught to regard the school, as it should be regarded, as an institution serving society in accordance with the demands of the general social order.

Perhaps the plan here outlined will not appeal to members of this association who are accustomed to programs of courses organized along other lines. To those who are not in agreement with this particular plan, this paper makes the plea that they formulate a curriculum that is a coherent group of courses in education to replace the miscellaneous courses which have been developed in the years of experimentation through which departments of education have recently been passing. There must be a body of fundamental knowledge which it is the function of departments of education to formulate and transmit. The textbooks on education now in existence are so diverse in their contents that those who look at the work of departments of education from the outside are disposed to believe that the subject of education has not been truly mastered by its devotees. There should be no delay on our part in uniting our forces in a concerted effort to bring system into what has been a chaotic situation.

I come back, therefore, to the proposal which was made earlier. This association should, I believe, organize groups to work out systematic programs in education. If several parallel undertakings are necessary because general agreement is lacking, let parallel under-

takings be organized and their outcomes critically examined. The essential demand is for systematization of our materials. Co-operation should supply within the general framework of each course those particular exercises and illustrations which will be most stimulating to students.

If I may once more refer to the experience of our department, I may report that we have found it necessary to readjust topics and to draw on various members of the department for contributions to each of the fundamental courses. Our experimentation illustrates the desirability of drawing on the knowledge of the professional group as broadly as possible rather than on the limited experience of an individual.

One final remark may perhaps be appropriate. In each of the fields with which the fundamental courses deal, there is need of much new research. The value of a fundamental course is that it reveals the deficiencies of a science as well as its achievements. Perhaps the best criterion by which to recognize a fundamental systematic program is its effect in stimulating research on the part of both the instructors in the department and their students.

WHEN ARE HIGH SCHOOLS TOO SMALL?

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The current impression is that there are too many small high schools. Concurring in such an opinion, one is prompted to inquire, "When is a high school too small?" Numerous indictments have been made against the small high school. It has become customary to point out weaknesses of the program of studies in high schools with small enrolments, and more recently attention has been directed to the inability of small schools to provide differentiated and enriched extra-curriculum programs. Much has been published concerning the deficiencies in the training of the teaching personnel of small high schools. Few investigators, however, have attempted to determine objectively the point at which a high school is definitely handicapped by its smallness.

The purpose of this article is to attempt to determine, from the standpoint of the teaching conditions provided, when high schools are too small. The article presents data indicating practices with respect to teacher assignments within a sampling of small high schools. The schools investigated were 495 four-year high schools in Texas, in which the enrolments ranged between 10 and 150 and the number of teachers from 3 to 14 to a school.

The spread in enrolments in these schools in terms of the size of the teaching staff is shown in Table I. The spread in enrolments indicates extensive overlapping as the size of the teaching staff is increased. Trends in the median enrolments show, however, that increases in enrolment are almost constant for each member added to the teaching personnel. The addition of approximately fifteen pupils tends to add a teacher to the staff. This range is fairly constant from group to group until schools which employ eight teachers are reached. Quartile enrolments are presented for each group of

schools to and including the group employing nine teachers. Since the study included only eight schools in which more than nine teachers are employed, these schools are grouped together and only the median enrolment is indicated. Attention is directed to the fact that the median of each group is approximately the first quartile of the following group up to the eight-teacher schools. Thereafter the range increases to such an extent that the median for the lower

TABLE I

DISTRIBUTION OF 495 HIGH SCHOOLS IN TEXAS ACCORDING TO SIZE OF TEACHING STAFF AND ENROLMENT

Number of Teachers	Number of Schools	Enrolment		
		First Quartile	Median	Third Quartile
3	41	34.00	47.08	57.44
4	153	44.32	62.50	79.23
5	134	62.50	80.80	103.20
6	80	76.66	94.00	118.75
7	39	99.06	114.50	129.06
8	26	84.50	129.50	143.30
9	14	111.25	140.80	146.90
10–14	8	.....	105.00	.....

group is considerably above the first quartile for the next upper group. Furthermore, the upper quartile for the nine-teacher schools is only 3.6 above the upper quartile for the eight-teacher schools.

The trends indicated by the data presented in Table I make possible several conclusions. For the purpose of this article, however, one principal fact stands out: There is a very possible indication that the number of teachers employed is dictated by administrative policy among schools employing eight or more teachers to a much greater extent than among the smaller schools. Below this upper limit the size of the teaching staff is much more directly a function of the size of the school's enrolment. In other words, four-year high schools employing fewer than eight teachers apparently tend to be too small to exercise any marked degree of administrative control over the size of their staffs.

The size of a school's teaching staff is a matter of obvious impor-

tance. If the offering of a minimum acceptable program of studies is assumed, the size of the staff determines how many different subjects the average teacher must teach. The data contained in Table II make possible a study of the relation between the number of subjects taught by each teacher and the size of the teaching staffs in the schools investigated. It will be noted that a comparatively small percentage of the teachers in the three-teacher schools are teaching a single subject. On the other hand, practically 70 per cent of the staff offer instruction in two different subjects. The percentage of teachers teaching three subjects is slightly higher than the percentage teaching single subjects. In the four-teacher schools approximately one-third of all teachers are teaching but one subject, while more than 50 per cent are teaching two subjects. In the five-teacher schools almost equal percentages of teachers are engaged in teaching one subject and two subjects. Nearly 95 per cent of all the teachers in eight-teacher schools are teaching one and two subjects. Only two teachers in this group are teaching four different subjects. Among the nine-teacher schools only eight teachers are engaged in teaching as many as three subjects. This evidence clearly indicates that the spread in the number of subject assignments decreases as the size of teaching staff increases.

The data contained in Table II also make possible a study of the spread in the number of subjects taught among schools with the same enrolments but with varying numbers of teachers employed. The principal conclusion to be drawn from this comparison might have been anticipated, namely, that size of enrolment has far less direct effect on teaching assignments than has size of staff. For example, among the schools enrolling 50–59 pupils and employing three teachers, 66.6 per cent of all teachers are teaching one or two subjects; in the four-teacher schools with similar enrolments, 86.8 per cent are teaching one or two subjects; in the five-teacher schools, 88.9 per cent; and in the six-teacher schools, 91.7 per cent. Among the schools enrolling 70–79 pupils the percentages of teachers teaching one or two subjects range from 83.3 per cent in the three-teacher schools to 100 per cent in the eight-teacher schools. One cannot but be impressed by the distinct gain in the possibilities of specialization in teaching as the size of enrolment increases, and yet it must be

TABLE II

PERCENTAGES OF TEACHERS TEACHING VARIOUS NUMBERS OF SUBJECTS IN 495 HIGH SCHOOLS IN TEXAS ARRANGED ACCORDING TO SIZE OF ENROLMENT AND SIZE OF TEACHING STAFF

Number of Different Subjects Taught by Each Teacher	Enrolment														
	10–19	20–29	30–39	40–49	50–59	60–69	70–79	80–89	90–99	100–109	110–19	120–29	130–39	140–50	All Schools
Schools with 3 teachers:															
1	0.0	8.3	20.0	16.7	19.0	22.2	16.6	.....	.....	0.0	.....	.....	.....	.....	13.0
2	100.0	41.7	73.3	61.1	47.6	72.2	66.7	.....	.....	100.0	.....	.....	.....	.....	69.9
3	0.0	33.3	6.7	19.4	33.3	5.6	16.6	.....	.....	0.0	.....	.....	.....	.....	14.6
4	0.0	16.7	0.0	2.8	0.0	0.0	0.0	.....	.....	0.0	.....	.....	.....	.....	2.4
Schools with 4 teachers:															
1	50.0	25.0	33.9	37.0	32.9	20.0	32.0	32.1	25.0	35.0	37.7	25.0	.....	.....	32.0
2	50.0	54.2	51.5	45.4	53.9	50.0	54.0	58.3	62.5	60.0	62.3	50.0	.....	.....	54.2
3	0.0	20.8	11.7	14.8	13.2	28.3	12.0	8.3	9.4	0.0	0.0	25.0	.....	.....	12.1
4	0.0	0.0	2.9	2.8	0.0	1.7	2.0	1.2	3.1	5.0	0.0	0.0	.....	.....	1.6
Schools with 5 teachers:															
1	.....	55.0	32.5	30.0	46.7	52.0	48.8	38.2	35.8	46.7	43.1	36.7	45.0	20.0	40.7
2	.....	30.0	50.0	55.0	42.2	40.0	41.1	52.7	55.8	48.9	46.1	40.0	45.0	60.0	46.7
3	.....	15.0	17.5	15.0	11.1	6.7	10.0	7.3	5.3	4.4	10.8	23.3	5.0	13.3	11.2
4	.....	0.0	0.0	0.0	0.0	1.3	0.0	1.8	3.1	0.0	0.0	0.0	5.0	6.7	1.3
Schools with 6 teachers:															
1	.....	.....	.....	50.0	50.0	50.0	44.5	51.7	62.5	73.3	71.4	50.0	54.2	52.8	55.6
2	.....	.....	.....	0.0	41.7	47.9	44.5	40.0	35.4	23.3	26.2	43.3	43.8	41.6	35.2
3	.....	.....	.....	50.0	8.3	2.1	11.0	8.3	2.1	3.3	2.4	6.7	0.0	2.8	8.7
4	.....	.....	.....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.8	0.4
Schools with 7 teachers:															
1	.....	.....	42.9	.....	.....	.....	57.2	28.6	54.3	62.8	62.8	52.4	77.6	50.0	54.2
2	.....	.....	57.1	.....	.....	.....	35.7	71.4	42.8	34.3	31.4	42.9	20.4	35.7	41.4
3	.....	.....	0.0	.....	.....	.....	7.1	0.0	2.9	2.9	5.8	4.7	2.0	14.3	4.4
4	.....	.....	0.0	.....	.....	.....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

TABLE II—*Continued*

Number of Different Subjects Taught by Each Teacher	Enrolment														
	10–19	20–29	30–39	40–49	50–59	60–69	70–79	80–89	90–99	100–109	110–19	120–29	130–39	140–50	All Schools
Schools with 8 teachers:															
1	.....	.....	62.5	.....	.....	43.8	75.0	62.5	62.5	.....	87.5	81.3	50.0	41.1	62.5
2	.....	.....	25.0	.....	.....	43.7	25.0	37.5	37.5	.....	12.5	12.5	34.4	53.5	31.3
3	.....	.....	12.5	.....	.....	12.5	0.0	0.0	0.0	.....	0.0	6.2	12.5	3.5	5.3
4	.....	.....	0.0	.....	.....	0.0	0.0	0.0	0.0	.....	0.0	0.0	3.1	1.8	1.0
Schools with 9 teachers:															
1	.....	.....	.....	.....	.....	.....	.....	44.4	55.5	.....	55.8	.....	.....	68.9	56.3
2	.....	.....	.....	.....	.....	.....	.....	55.6	33.3	.....	33.3	.....	.....	26.6	37.3
3	.....	.....	.....	.....	.....	.....	.....	0.0	11.1	.....	11.1	.....	.....	4.4	6.3
4	.....	.....	.....	.....	.....	.....	.....	0.0	0.0	.....	0.0	.....	.....	0.0	0.0
Schools with 10–14 teachers:															
1	.....	.....	.....	55.5	.....	.....	47.6	.....	.....	80.0	60.0	.....	.....	80.0	64.8
2	.....	.....	.....	44.4	.....	.....	47.6	.....	.....	20.0	40.0	.....	.....	20.0	34.1
3	.....	.....	.....	0.0	.....	.....	4.8	.....	.....	0.0	0.0	.....	.....	0.0	1.1
4	.....	.....	.....	0.0	.....	.....	0.0	.....	.....	0.0	0.0	.....	.....	0.0	0.0

recognized that the gain is more directly a result of the size of the teaching staff employed than a result of the size of the enrolment itself.

Facts concerning the numbers of subjects taught by individual teachers have small significance, however, except as they are interpreted in the light of some criterion governing the number of subjects which an individual teacher can fairly be expected to teach. Interestingly, none of the high schools included in this study have teachers who are teaching more than four subjects. But may not even this number of subjects represent too large a spread to allow effective work?

The number of different subjects which an efficiently trained high-school teacher should be prepared to teach is a matter of considerable controversy. There are those who contend that single-subject specialization tends to result in a narrow product—too narrow for the liberalizing influences which secondary-school teachers should be able to offer. Those who hold such views maintain that curriculum narrowness and prejudices may be mitigated somewhat by insisting that teachers offer instruction in more than one department or subject. Disregarding the issues involved in this aspect of the controversy, it may be pointed out that there is danger in a spread in subject assignments so severe that teachers are called on to supervise learning in more departments than normal preparation will allow. A study of teaching assignments in relation to preparation may thus determine partially whether assignments have been properly made.

Data concerning the relation of subject assignments to subject preparation of teachers in the schools investigated are presented in Table III. These data are based on information obtained from the Texas State Department of Education with respect to the college major and minor subjects and the subject assignments of the individual high-school teachers concerned. Ordinarily the college major is interpreted to mean that the student has received from twenty-four to thirty semester hours of training in a given subject. The minor subject usually involves from twelve to eighteen semester hours of training. It is generally agreed that preparation in a subject less than that indicated by minor work is hardly sufficient to warrant efficient instruction. Table III indicates the number of teach-

TABLE III

PERCENTAGES OF TEACHERS TEACHING SUBJECTS WITHOUT PROPER PREPARATION IN 475 HIGH SCHOOLS IN TEXAS ARRANGED ACCORDING TO SIZE OF TEACHING STAFF

Number of Subjects Taught	Number of Subjects Not Properly Prepared	Teachers without Proper Preparation	
		Number	Per Cent
Schools with 3 teachers (35 schools, 105 teachers):			
1	1	5	4.76
2	2	11	10.48
2	1	29	27.62
3	3	3	2.86
3	2	10	9.52
3	1	6	5.71
4	4	2	1.90
4	2	1	.95
Total		67	63.81
Schools with 4 teachers (148 schools, 592 teachers):			
1	1	48	8.11
2	2	34	5.74
2	1	129	21.79
3	3	8	1.35
3	2	24	4.05
3	1	32	5.41
4	4	1	.17
4	3	4	.68
Total		280	47.30
Schools with 5 teachers (133 schools, 665 teachers):			
1	1	54	8.12
2	2	54	8.12
2	1	140	21.05
3	3	12	1.80
3	2	2	.30
3	1	21	3.16
4	3	1	.15
4	2	1	.15
Total		285	42.86
Schools with 6 teachers (75 schools, 450 teachers):			
1	1	39	8.67
2	2	15	3.33
2	1	82	18.22
3	3	3	.67
3	2	8	1.78
3	1	11	2.44
4	1	1	.22
Total		159	35.33

TABLE III—*Continued*

Number of Subjects Taught	Number of Subjects Not Properly Prepared	Teachers without Proper Preparation	
		Number	Per Cent
Schools with 7 teachers (36 schools, 252 teachers):			
1	1	19	7.54
2	2	4	1.59
2	1	49	19.44
3	3	4	1.59
3	2	1	.40
3	1	5	1.98
Total		82	32.54
Schools with 8 teachers (26 schools, 208 teachers):			
1	1	14	6.73
2	2	8	3.85
2	1	25	12.02
3	2	2	.96
3	1	4	1.92
4	1	1	.48
Total		54	25.96
Schools with 9 teachers (14 schools, 126 teachers):			
1	1	7	5.56
2	2	1	.79
2	1	18	14.29
3	3	1	.79
3	2	2	1.59
3	1	2	1.59
Total		31	24.60
Schools with 10–14 teachers (8 schools, 88 teachers):			
1	1	7	7.95
2	2	5	5.68
2	1	8	9.09
3	3	1	1.14
Total		21	23.86

ers in the schools, arranged according to size of the teaching staff, who are attempting to teach subjects in which they received neither major nor minor training while in college. Regardless of the complete acceptability of such a criterion for measuring preparation in a subject, a good opportunity is thus afforded for comparing the relative standings of the schools as the number of teachers is increased.

The term "not properly prepared" used in the table is to be construed as meaning that the teachers have had neither major nor minor training in the subjects which they are teaching.

Thirty-five three-teacher high schools with a total of 105 teachers are included in this table. Of these 105 teachers, 67 (63.81 per cent) are engaged in teaching subjects for which they were not properly prepared while in college. Stated differently, approximately two-thirds of the teachers in the three-teacher high schools investigated are teaching one or more subjects without proper preparation. A total of 101 subjects are taught in these schools by teachers who do not qualify as properly prepared. Slightly less than one-half the teachers in the four-teacher schools are teaching one or more subjects without proper preparation. In these schools a total of 280 teachers are offering instruction in 365 courses in which they received neither major nor minor training. Thus, the percentage of teachers who lack proper training for the courses offered is markedly decreased in four-teacher schools over three-teacher schools. With each further increase in the size of the teaching staff, there is also a decrease in the proportion of teachers who are inadequately prepared. From slightly less than 50 per cent in the four-teacher schools, the percentages fall to 43 per cent in the five-teacher schools, 35 per cent in the six-teacher schools, 33 per cent in the seven-teacher schools, and approximately 25 per cent in the eight- and nine-teacher schools.

Two characteristics revealed by these data are of particular significance in the present inquiry. First, there is a steady drop in the proportion of undesirable teaching assignments until the eight-teacher schools are reached. Thereafter, so far as the available data show, increasing the size of the staff brings no parallel increase in the appropriateness of teaching assignments. Second, irrespective of the size of their staffs, undesirable assignments are surprisingly common among all the schools investigated. It is interesting to note that, both among the schools employing eight or more teachers and among those employing fewer than eight teachers, approximately three-fifths of the teachers who are teaching subjects for which they are not prepared teach only two different subjects. Clearly, the schools' smallness alone does not explain the large number of unde-

sirable assignments; maladroitness in administration must be responsible for a considerable proportion of such assignments among the schools of all the sizes represented.

The fact that the faulty teaching assignments are in part a result of bungling administration makes it impossible to determine how small a school must be before its limited size *necessarily* begins to affect its teaching assignments. Table III gives some indication, however, of how large a school needs to be *in current practice* before it is likely to escape the handicap of limited size. The data presented in this table clearly suggest that four-year high schools employing eight or more teachers need have no greater proportions of undesirable assignments than are found in larger schools.

SUMMARY

When the results of this analysis as a whole are presented in summary form, it appears (1) that schools able to employ eight or more teachers are not seriously handicapped with respect to administrative control over the size of their staffs, (2) that the size of the teaching staff rather than the pupil enrolment tends to determine the number of different subjects assigned to each teacher, and (3) that schools employing eight or more teachers exhibit no special handicaps with respect to the assignment of specific subjects to teachers who are presumably qualified to teach those subjects.

The fact that the eight-teacher school recurs in these conclusions is significant. Not unjustifiably one may conclude that four-year high schools employing eight or more teachers are large enough to afford reasonably satisfactory conditions for teaching. Conversely, schools employing fewer than eight teachers would seem, from the standpoint of current practice, to be "too small." It should be repeated that current practice of itself probably provides no sound measure of the teaching conditions which small schools *might* provide under thoroughly skilful administration. As a clue to the teaching conditions which small schools *do* provide, this analysis may nevertheless be of value.

GROUP CORRECTIVE SPELLING IN THE JUNIOR HIGH SCHOOL—AN EXPERIMENT

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The elementary school usually assumes responsibility for training in the so-called "tool subjects." In the main, pupils who enter the high school have mastered reading, handwriting, spelling, and number, but a considerable number in perhaps every high school are seriously deficient in one or more of these tool subjects. Inability to use effectively the tools of learning so retard a pupil's progress that attempts to eliminate his handicaps must be made early in his high-school career.

The literature on remedial or corrective instruction describes several methods of meeting the needs of problem pupils. The procedures range from various types of group instruction to highly individualized remedial instruction by a case worker. Both group and individual corrective teaching have distinct advantages and disadvantages. It is sometimes difficult to segregate pupils deficient in one or more tool subjects into special classes, and, if the number of pupils in need of corrective instruction is relatively large, the cost of individual remedial instruction is prohibitive.

In the University High School, University of Chicago, corrective instruction in spelling, with which this report is concerned, has been almost entirely individual. The teachers in all classes have directed the pupils' attention to misspelled words in their regular written work. Pupils have been urged or required to keep lists of misspelled words, which have furnished the basis of attack on the pupils' shortcomings. Thus the instruction has been individual and at best incidental. Dissatisfaction with this method was expressed frequently by teachers of English, as well as by teachers of other subjects, on the ground that so much time was consumed, with discouraging results, as to interfere seriously with the regular work of the course. The presence of a relatively large number of poor spellers in the first

two years of the high school and the dissatisfaction with the existing method of handling problem cases impelled the Department of English early in 1932 to organize a program of group corrective instruction to be carried out by the teachers of English in their regular classes. This article describes the experiment.

IDENTIFICATION OF POOR SPELLERS

Construction of a spelling test.—At the beginning of the study it was decided to place in the corrective-spelling groups only pupils who were deficient in the fundamental spelling vocabulary. It seemed that this selection could best be made by surveying the spelling ability of the entire sub-Freshman and Freshman classes (Grades VII and VIII) with a test the words of which were rigidly selected on the basis of several scientifically-constructed spelling lists. It also appeared desirable to make two forms of the test in order that pupils might be tested at the end of the training period with a measuring instrument equivalent to the instrument used before the teaching.

A reservoir of fundamental spelling words was secured in the following manner: The words in Columns Q to U, inclusive, of the Ayres Spelling Scale were checked against the two thousand most common words in the Horn[1] list of 10,000 spelling words and the Breed[2] list of 3,481 spelling words. No words were retained that were not in both lists as well as in the Ayres scale. Thus, the words finally selected were, without question, those very commonly used in writing. Two equivalent lists of fifty words each were then drawn from the reservoir by taking for each list ten words that had originally been found in each of Columns Q, R, S, T, and U of the Ayres scale. The median difficulty of the words in each list was equal to that of Column S. The norm for Grade VII, or sub-Freshman year, was 84 per cent of correct spellings, and the norm for Grade IX, or Freshman year,[3] was 96 per cent of correct spellings.

[1] Ernest Horn, *A Basic Writing Vocabulary*, pp. 57–182. University of Iowa Monographs in Education, First Series, No. 4. Iowa City, Iowa: University of Iowa, 1926.

[2] Frederick S. Breed, *How To Teach Spelling*, pp. 107–60. Dansville, New York: F. A. Owen Publishing Co., 1930.

[3] The University High School comprises Grade VII (sub-Freshman year) and Grades IX–XII, inclusive. Grade VIII is considered to have been dropped out, although the majority of the pupils enter from schools giving eight years of elementary-school work.

Two forms of a spelling test, Form A and Form B, were constructed from the list of words. Each of the words in the test was used in an illustrative sentence. A test blank was prepared on which the sentences appeared with the words which were to be spelled omitted. The person giving the test was instructed to pronounce each spelling word while the pupils looked at the illustrative sentence to make sure that they understood the word. The pupils were then to write each word in a space provided on the blank. The test was submitted for criticism to a number of competent teachers and was then mimeographed for trial use with a group of high-school pupils. The nature of the test may be inferred from the directions and the first five items of Form A, which are as follows:

Directions.—As the words are pronounced by the teacher, write them in the blanks at the right side of the page. Do not fill the blanks in the sentences, which are given to help you understand the spelling words. Do your very best on this test and try to make a perfect score.

1. The boy is ..... late. .....
2. There is no ..... between the events. .....
3. The ..... room was filled. .....
4. It is an ..... meeting. .....
5. We shall return on ....

[The five words used with these illustrative sentences were "sometimes," "connection," "entire," "important," and "Saturday."]

The test was tried out with seventy-five high-school Sophomores. The correlation between the scores on Form A and Form B was $.871 \pm .019$. The forms were found to be approximately equivalent in difficulty. When two points were allowed for each word, or 100 points for each form of the test, the difference between the average scores on the two forms was only 0.9. In the subsequent calculations 0.9 was subtracted from the scores on Form B, the easier form, to equate these to the scores on Form A.

Selection of cases for corrective teaching.—Form A of the spelling test was administered to the Freshman and sub-Freshman classes of the University High School in January, 1932. The English teachers administered the tests in their own classes in accordance with carefully formulated written directions. The tests were scored by graduate students in education and were sampled for accuracy of scoring by a research worker in the high school.

A large percentage of the pupils in both classes were found to be decidedly below norm in spelling ability. The Freshmen who spelled less than 88 per cent of the words correctly and the sub-Freshmen whose percentage of correct spellings was less than 72 were selected for corrective work in spelling. These corrective groups included slightly more than one-fourth of the pupils in the two classes. In all, thirty-four Freshmen and twenty-three sub-Freshmen were identified as sufficiently retarded to require corrective instruction.

CONSTRUCTION OF A BASIC LIST OF SPELLING WORDS

In this experiment mastery of a basic list of spelling words was made the chief basis of attack on the pupils' deficiencies. After available spelling lists had been carefully examined, the *Breed-French Speller*[1] was chosen as the basis on which to construct a special list for use in this experiment. A list of 1,500 words was prepared. The first 1,000 words were taken from the seventh- and eighth-grade word lists. The seventh- and eighth-grade lists contain 1,008 words, fourteen of which are contractions and abbreviations. The contractions and abbreviations were discarded, and the last six words from the sixth-grade list were added to make a net total of 1,000 words. The last 500 words were selected rather arbitrarily from a list of 720 technical words most commonly used in the study of school subjects, also found in the *Breed-French Speller*. Permission was obtained to mimeograph the list of words for use in the experiment.

INSTRUCTIONAL PROCEDURE

The instructional procedures employed in this study were designed to meet the following conditions: (1) to supply a program of corrective instruction which might be undertaken by the teachers of English in their regular classes, (2) to provide a technique of instruction which should be as largely self-administering as possible for both teacher and pupil, (3) to give a systematic review of a basic list of words appropriate for the grade level, (4) to make provision for individual differences in spelling handicaps, and (5) to give training in effective methods of studying spelling.

[1] For a description of the technique employed in building the Breed-French list of words, see Frederick S. Breed and William C. French, *The Breed-French Speller*, pp. iv–xiv. Chicago: Lyons & Carnahan, 1927.

In order that the corrective training might be carried forward with reasonable uniformity in all classes, seven sheets of directions for teachers and pupils were prepared and mimeographed. The three sheets for teachers contained a brief statement about the nature and the purpose of the corrective work to be undertaken and gave specific suggestions for instructional procedures. The directions were not meant to preclude the exercise of individual teacher initiative in the use of teaching devices best suited to the needs of the pupils. Three sheets were also prepared for the pupils, the first two of which explained the purpose of the corrective training, gave specific directions as to how the pupil should proceed from week to week, and listed the dates on which pretests and check-up tests would be given. The third sheet contained directions on how to study spelling. Nine steps, adapted from the *Breed-French Speller*,[1] were suggested in learning how to spell words. The seventh mimeographed sheet was a form letter sent to each pupil's parents. It explained the purpose of the work, indicated briefly the methods of instruction to be followed, and solicited the co-operation of the parents in aspects of the work which the pupil might be expected to do at home.

In the sub-Freshman and Freshman years in the University High School, regular class sessions are held four periods a week, the fifth period being a free period for study, recreative reading, or any voluntary activity which the pupil may wish to undertake. The teacher is free during this fifth period to give assistance to pupils who need individual instruction. It was decided that a portion or all of the fifth period should be used to give instruction in corrective spelling to the pupils who had been identified as poor spellers. Thus, the corrective pupils in each of the regular English classes met with the teacher as a group while the other pupils worked independently in the classroom. Four teachers carried on the work in seven different classes. The number of problem pupils ranged from five to ten to a class.

Actual work with the pupils began on February 29, 1932. After the teacher had given a preliminary explanation of the corrective work, the three sheets of directions for study and the fifteen sheets

[1] *Ibid.*, p. xi.

containing the 1,500 words were distributed. The group was then given a pretest on the first block of 125 words. Pupils who missed words on the pretest were asked to study the misspelled words in accordance with the directions given for effective study. The teacher during the remainder of the hour was free to work with individual pupils. Some pupils used only a small portion of the hour for spelling, while others used the entire period. Those who needed more than one class period a week were asked to do work after school or at home.

The corrective training continued in this manner for thirteen weeks. The pupils were pretested on blocks of 125 words for eight weeks and blocks of 100 words for five weeks. After a block of 250 words had been studied, check-up tests were given to determine the pupils' progress and to motivate their efforts. The Breed Standardized Tests for the Breed-French Speller were used as check-up tests for the first thousand words in the spelling list. Each of the four tests contains fifty words selected objectively from the seventh- and eighth-grade word lists. For example, the first test, which is designed for the first half of Grade VII, paralleled the first block of 250 words in the list used in the experiment. The next three tests covered the last three blocks of 250 words each. Check-up tests on the last 500 words were constructed by the authors of this report.

The corrective training continued until June 7, 1932, when a final test was given to determine the pupils' progress during the training period.

IMPROVEMENT DURING THE TEACHING

It will be recalled that Form A of the spelling test constructed at the beginning of the experiment was administered before the corrective teaching began. Form B was given in June after the teaching had been discontinued. The mean scores on the two forms are shown in Table I. Both classes gained in spelling ability during the period between the tests. The gain was small for the pupils who received no training. Some improvement on the part of these pupils was to be expected as a result of incidental learning. Furthermore, many of them were stimulated to improve their spelling ability because other pupils in their classes were studying spelling. A number of non-corrective pupils requested copies of the word list in order

that they might review the words in the list. The fact that a considerable number of pupils made perfect, or nearly perfect, scores on the initial test undoubtedly caused the gains of the non-corrective pupils to appear smaller than they actually were. The average gains made by the pupils who were taught spelling were large. The sub-Freshman corrective group gained 13.0 points on the test, and the

TABLE I

MEAN SCORES OF SUB-FRESHMEN AND FRESHMEN ON FORM A AND FORM B OF SPELLING TEST FOR THE JUNIOR HIGH SCHOOL ADMINISTERED IN JANUARY AND JUNE, 1932

GROUP	SCORE		
	January	June	Gain
Sub-Freshmen:			
23 pupils in corrective group....	55.7	68.7	13.0
54 pupils not in corrective group	90.0	93.8	3.8
77 pupils in the entire class.....	79.7	86.3	6.6
Norm.....	84.0	84.0	.....
Freshmen:			
34 pupils in corrective group....	70.3	79.9	9.6
98 pupils not in corrective group.	93.4	94.6	1.2
132 pupils in the entire class.....	87.4	90.5	3.1
Norm.....	96.0	96.0	.....

Freshman corrective group gained 9.6 points. The improvement in each class amounts to almost a year of progress on the Ayres scale. It is a significant fact that this amount of progress was achieved within a period of about four and one-half months, during which only one period a week was devoted to classroom teaching. A number of pupils who were also doing corrective work in handwriting gave considerably less than one period a week to spelling.

Data relative to individual gains and losses of pupils in the corrective groups are shown in Table II. Of the fifty-seven pupils who received corrective training in spelling, fifty-one pupils, or 89 per cent, made gains in spelling ability.

PERMANENCE OF THE GAINS

Educational literature contains numerous studies of corrective and remedial teaching which show significant results for the training

period, but altogether too few of these follow the pupils after the period of the experiment to determine the retention of the gains made in the teaching period. A study of the retention of gains made during a short period of intensive training is particularly important in the skill subjects, for skills are known to atrophy relatively quick-

TABLE II

NUMBERS AND PERCENTAGES OF PUPILS IN CORRECTIVE GROUPS WHO GAINED AND LOST IN SPELLING TEST SCORES DURING THE EXPERIMENT

Group	Number	Per Cent
Sub-Freshmen:		
Gained in spelling score....	22	96
Lost in spelling score.....	1	4
Freshmen:		
Gained in spelling score...	29	85
Lost in spelling score.....	4	12
No change in score.....	1	3

TABLE III

GAINS MADE AND GAINS RETAINED IN SPELLING BY SUB-FRESHMEN AND FRESHMEN IN THE UNIVERSITY HIGH SCHOOL

Gain	Spelling Score			Gain		
	January, 1932 (Form A)	June, 1932 (Form B)	October, 1932 (Form A)	January to June	June to October	January to October
Sub-Freshmen:						
18 pupils in corrective group...	56.6	68.2	65.8	11.6	−2.4	9.2
40 pupils not in corrective group	89.2	93.6	92.5	4.4	−1.1	3.3
Freshmen:						
25 pupils in corrective group...	71.5	84.5	81.9	13.0	−2.6	10.4
79 pupils not in corrective group	95.2	96.3	95.8	1.1	−0.5	0.6

ly. In order that the permanency of the gains made during the corrective period in spelling might be determined, all pupils who returned to the University High School after the summer vacation were retested in October, 1932, with Form A of the spelling test described earlier in this article. The results of the retest and the mean scores for January and June are presented in Table III. Pu-

pils at the junior high school level apparently may be expected to lose slightly in spelling ability during the summer vacation, as the average score made in October by the pupils who received no corrective training was lower than the average score made by the same pupils in June. The pupils who were taught spelling lost more during the summer vacation than did the non-corrective pupils. Their losses, however, were not large—approximately one-fifth of the amount gained during the corrective training. The inferior spellers, in other words, retained over the summer vacation 80 per cent of the gain made during the experiment. The data warrant the conclusion that the improvement in spelling ability made during the training period was permanent.

CONCLUSIONS AND IMPLICATIONS

The two groups of pupils—twenty-three sub-Freshmen and thirty-four Freshmen—who were taught corrective spelling by the group method made approximately one year of progress during a period of thirteen weeks, during which only one class period a week was devoted to class work in spelling. Their gains in spelling ability were permanent to the extent that they retained about 80 per cent of the gains over the summer vacation.

Although a few pupils doubtless require the individual remedial attention which only an expert in the teaching of spelling can give, this study warrants the conclusion that the spelling difficulties of most pupils at the junior high school level may be treated successfully by means of a group technique. It appears, therefore, that other high schools might well use a procedure similar to that described in this article as one means of overcoming spelling deficiencies.

PREDICTING ALGEBRAIC ABILITY

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PURPOSE OF THE STUDY

All educators who are concerned with the teaching of mathematics are of the opinion that for purposes of guidance and classification it would be most desirable to be able to predict ability in algebra. However, there seems to be little agreement on the means to be used for making this prediction. Some educators favor the intelligence quotient; some, teachers' marks; and some, a prognostic test. Still others have faith in none of these but offer no constructive suggestions of their own. The study reported in this article was devoted to an investigation of the situation with a view to solving the following two problems: (1) What are the comparative prognostic values of the intelligence quotient, teachers' marks, and a prognostic test? (2) What is the best criterion for predicting achievement in algebra?

PROCEDURE OF THE STUDY

Subjects used.—In this investigation eighty-three pupils of both sexes from the first half of Grade IX in the Upper Darby Junior High School, Upper Darby, Pennsylvania, were used as subjects. These pupils were studying elementary algebra during the term from September, 1931, to February, 1932. They comprised a normal group in intelligence, their intelligence quotients ranging from 76 to 134, with an average of 105.5.

Source of data.—The data for this study were obtained from the following sources:

1. Results of the Otis Group Intelligence Scale. This test, used to measure the intelligence quotient of the pupils, was administered during May and September, 1931.

2. Results of the Rogers Test of Mathematical Ability. This test was selected as the prognostic test to be used in the study and was administered at the beginning of the term.

3. Results of the Breslich Algebra Survey Test, First Semester, Form A. This test furnished an objective measurement of the achievement of the pupils at the end of the first term of elementary algebra and was administered in February, 1932.

4. Teachers' marks for the year's work in eighth-grade general mathematics.

Statistical treatment.—The problems under consideration can be most effectively treated by a study of the correlations involved. This method is the simplest and the most objective method of solution. No opinions are necessary, and a comparison of the correlations obtained gives at once the desired result. The criterion of prediction which has the highest correlation with achievement is the best. The following seven possible criteria of prediction were first formulated and then correlated, by means of partial and multiple correlation coefficients, with achievement at the end of the first term of elementary algebra: (1) intelligence quotient; (2) a prognostic test; (3) teachers' marks for work in eighth-grade general mathematics; (4) the composite of the intelligence quotient and the score on the Rogers test; (5) the composite of teachers' marks and the intelligence quotient; (6) the composite of teachers' marks and the score on the Rogers test; and (7) the composite of teachers' marks, the intelligence quotient, and the score on the Rogers test.

SUMMARY OF RESULTS AND CONCLUSIONS

The correlations of achievement with the seven possible criteria used in this investigation are shown in Table I. The following conclusions are evident from the results shown in this table.

TABLE I

CORRELATIONS OF ACHIEVEMENT IN ALGEBRA OF EIGHTY-THREE PUPILS WITH SEVEN CRITERIA OF PREDICTION OF ALGEBRAIC ABILITY

Criterion	Correlation
Intelligence quotient	.54± .06
Rogers Test of Mathematical Ability	.65± .05
Teachers' marks in eighth-grade general mathematics	.61± .06
Composite of intelligence quotient and Rogers test	.66± .05
Composite of intelligence quotient and teachers' marks	.70± .04
Composite of Rogers test and teachers' marks	.73± .04
Composite of intelligence quotient, Rogers test, and teachers' marks	.74± .04

1. The correlation of intelligence with achievement in algebra is in substantial agreement with other studies of this relationship. The correlation for this criterion of prediction is, however, the lowest in the group considered.

2. Teachers' marks in eighth-grade general mathematics are the next best criterion of prediction. This criterion is not so reliable as the Rogers test, perhaps because the Rogers test is purely a measure of mathematical ability, while teachers' marks are influenced by factors other than ability, such as a pupil's personality, his attitude and conduct in class, and the teachers' standards of scholarship.

3. Of the three single criteria of prediction, the Rogers Test of Mathematical Ability is the most reliable.

4. The correlations indicate that the composite criteria are better than any single criterion—a result which would naturally be anticipated in view of the increase in the number of factors considered.

5. The composite of the intelligence quotient, the Rogers test, and teachers' marks is the most reliable criterion for predicting algebraic ability. However, the difference between the correlation for this criterion and the correlation for the composite of the Rogers test and teachers' marks is only .01, an inappreciable quantity. Since the composite of the Rogers test and teachers' marks obviates the necessity for determining the intelligence quotient, and therefore requires less effort and expense to use, this criterion can be considered as the most reliable and the most practical measure for predicting ability in algebra.

ADMINISTERING THE HIGH-SCHOOL CAFETERIA

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THE PROBLEM AND THE SCHOOLS REPRESENTED

A study of high-school cafeterias in Illinois and the neighboring states revealed facts relative to the seating capacity of the cafeterias; total incomes; financial profits or losses; the training, the duties, and the responsibilities of managers; purchasing practices; and the administering of the business in general. These data were secured for the school year 1930–31 through the medium of a questionnaire sent out after a personal visitation by the writer. The returns of the questionnaires were tabulated in such a way as to show general practices and exceptional procedures.

The twenty-five schools included in the study are of three types, known in Illinois as "township high schools," "city high schools," and "community high schools." The number of schools of the three types are eleven, thirteen, and one, respectively. The average enrolment of the schools is 1,330. No relation appears between type of school and enrolment. The type of school, however, has a bearing on the amount of cafeteria equipment necessary to accommodate adequately all the pupils desiring service. Township high schools, which draw their pupils from a relatively large geographic area, need more cafeteria equipment in proportion to enrolment than do city schools located near a business section.

CAFETERIA SERVICE

The enrolment of each school, the average number of persons served daily, and the average percentage of the total enrolment served are shown in Table I. The range in numbers served daily in the cafeterias varies from 7.9 per cent of the enrolment in a large city high school to 78.0 per cent in a township high school. The average is 35.3 per cent. The large high schools appear to be making relatively greater use of their cafeterias than the smaller schools. This

fact is brought out when the schools are ranked according to enrolments and numbers served daily. The correlation is +.481.

Many school cafeterias have been forced to serve more pupils than their lunchrooms can accommodate at one time. It has therefore

TABLE I

ENROLMENTS, AVERAGE NUMBERS OF PERSONS SERVED DAILY IN THE CAFETERIAS, AND PERCENTAGES OF ENROLMENT SERVED IN TWENTY-FIVE HIGH SCHOOLS DURING SCHOOL YEAR 1930–31

School	Enrolment	Average Number Served Daily	Percentage of Enrolment Served Daily
A	2,800	637	22.8
B	2,725	1,766	64.8
C	2,100	175	8.3
D	1,900	150	7.9
E	1,700	850	50.0
F	1,700	250	14.7
G	1,655	800	48.3
H	1,500	350	23.3
I	1,400	650	46.4
J	1,365	175	12.8
K	1,340	1,045	78.0
L	1,314	129	9.8
M	1,300	550	42.3
N	1,300	120	9.2
O	1,200	230	19.2
P	1,175	625	53.2
Q	1,140	300	26.3
R	1,070	550	51.4
S	925	150	16.2
T	875	100	11.4
U	800	400	50.0
V	587	350	59.6
W	530	150	28.3
X	491	150	30.5
Y	375	80	21.3
Average	1,331	469	35.3

become necessary to devise means of serving, with the usual amount of space and equipment, more pupils than is considered a normal load. In order that more than one lunch period might be provided and classes continue on a regular schedule, several schemes have been devised. Plans in use provide overlapping periods and double class periods, either the former or the latter half being used for lunch.

Some schools send half the pupils to their home rooms and half to lunch during one period. In still another scheme forty-minute class periods and thirty-minute lunch periods are used. This program gives the cafeteria employees time to prepare for the next group. This plan staggers three lunch periods and three class periods, but everyone is back on the same schedule at the end of the third lunch period.

The use of more than one lunch period increases the serving capacity to two, three, and even four times the seating capacity. The average of the seating capacity of all these cafeterias is 361. The use of more than one lunch period in thirteen of the schools increases the total serving capacity to an average of 656 persons, an increase of 81.7 per cent. These figures, however, do not indicate the average use made of the cafeterias. The total average serving capacity is 656 persons daily, but the average number of persons served daily is only 469. The average daily use of the cafeterias is, then, 71.5 per cent of their capacity.

FINANCES

The chief income of the high-school cafeteria is usually the money received from the customers for meals. Some cafeterias also operate candy counters, from which they make comparatively large profits. In this study the total yearly receipts are used for comparative purposes. The amounts of money taken in by the cafeterias, regardless of the source, are shown in Table II. No attempt was made to ascertain the amount of money spent by the customers for individual items of food in the different cafeterias, but the average receipts for each meal were checked for each cafeteria. The range in the receipts per person per meal is from 12 cents in Schools B and J to 25 cents in Schools L and S. The average of the receipts per person per meal in all the cafeterias considered is 18 cents. The average for the upper fourth is 23 cents; for the lower fourth, 14 cents.

Practically all the school cafeterias operate on a paying basis. While it is not the general opinion that the cafeteria should be operated as a money-making enterprise, yet the generally accepted principle is that the cafeteria should pay its own way. In the operation of a cafeteria there is a probability of a deficit or a surplus. The surplus and the percentage that the surplus is of the total income in

each of the twenty-five cafeterias are shown in Table III. The range in the surpluses is from $100.00 for School W to $2,622.75 for School G. The percentage that the surplus is of income varies widely. School B did a total yearly business of $41,569.00 with a surplus of $203.05, or only 0.5 per cent, while School G had an income of

TABLE II

TOTAL YEARLY RECEIPTS AND RECEIPTS PER PERSON SERVED IN CAFETERIAS OF TWENTY-TWO HIGH SCHOOLS DURING SCHOOL YEAR 1930–31

School	Total Yearly Receipts	Receipts per Person Served
A	$20,214.26	$31.73
B	41,569.00	23.54
C	5,000.00	28.57
E	31,000.00	36.47
F	10,000.00	40.00
G	19,711.72	24.64
H	7,310.68	20.89
I	25,863.84	39.79
J	5,130.00	29.31
K	35,607.31	34.07
L	6,800.25	52.72
M	15,000.00	27.27
O	10,241.98	44.53
P	30,000.00	48.00
Q	12,572.23	41.91
R	18,484.93	33.61
S	8,500.00	56.67
T	4,120.00	41.20
U	12,960.00	32.40
V	7,861.52	22.46
W	7,117.66	47.45
X	6,839.60	45.60
Average	$15,541.14	$32.93

$19,711.72 for the year with a surplus of $2,622.75, or 13.3 per cent. The average surplus for the twenty-one schools showing surpluses for the year is 5.3 per cent of the total yearly income. Most of the school cafeterias show surpluses for the year. In some cases the surpluses were excessive, while in others the profits were nominal. The candy counter, a rich source of revenue, is responsible for the surplus in many schools. The manager of a large cafeteria in an Indiana school informed the writer that the profits from the sale of candy keeps her cafeteria on a paying basis.

USES MADE OF SURPLUS

Inquiry concerning the use made of the surplus by the different schools brought forth a variety of answers. Sixteen schools use their surpluses for new equipment and replacements. One cafeteria turns the surplus into the school-cafeteria fund of the city. One school reports that, whenever it is evident that there will be a surplus, the prices of foods are lowered and the pupils receive the benefits. Three schools use their surpluses to provide free lunches for needy pupils and to finance school projects. In one of the schools an accurate monthly check is maintained, and the prices are adjusted to enable the cafeteria to operate on a paying basis without accumulating a large surplus. In some schools any surpluses that accrue in the winter

TABLE III

SURPLUSES OF CAFETERIAS OF TWENTY-FIVE HIGH SCHOOLS DURING SCHOOL YEAR 1930–31 AND PERCENTAGES THAT SURPLUSES WERE OF TOTAL YEARLY INCOME

School	Surplus	Percentage of Income
A	$ 350.20	1.7
B	203.05	0.5
C	300.00	6.0
D	177.09	14.9
E	2,000.00	6.5
F	300.00	3.0
G	2,622.75	13.3
H	150.00	2.1
I	1,876.31	7.3
J	0.00	0.0
K	2,258.89	6.3
L	392.89	5.8
M	1,600.00	10.7
N	260.00	3.3
O	362.14	3.5
P	1,965.00	6.6
Q	0.00	0.0
R	939.30	5.1
S	− 300.00	− 3.5
T	180.00	4.4
U	275.00	2.1
V	550.00	7.0
W	100.00	1.4
X	0.00	0.0
Y	300.00	3.7
Average	$ 817.27	5.3

months are spent in the early spring for vegetables and fruits which are out of season.

Only one school was found which had a deficit for the year. When the cafeteria managers were asked how deficits are met, they reported as follows: Eight said that it was understood in the beginning that a deficit must not occur. Two reported that the school-cafeteria fund of the city would absorb any local deficit. Four managers said that any deficit would have to be made up the following year. Ten managers reported that their boards of education would make up any deficits that might occur.

While it is true that only one cafeteria of the twenty-five studied shows a deficit, many of the cafeterias fail to take into consideration several items for which they are directly responsible. All the cafeteria managers enjoy benefits for which they do not pay. No manager pays the cafeteria light bills; only eight pay for the gas consumed in cooking; and several use the school janitors for services in the cafeteria.

EQUIPMENT COSTS

If a cafeteria is to be operated efficiently, a certain amount of money must be invested in equipment for the preparing and the serving of food. The amount of money need not be large in comparison with the number of pupils accommodated, but a sufficient amount of equipment must be provided so that food can be served properly and without waste of the pupils' time. The time factor necessitates the installation of equipment that is used for only a short period each day and the expenditure of more money for equipment than would be necessary if unlimited time could be allowed for the serving of noon lunches.

The costs of the cafeteria equipment vary considerably. The dining-room equipment for one school was made in the city parental school, and the cost was thus reduced to a minimum. Another school went so far as to instal a soda fountain, a comparatively expensive fixture. The original cost of the equipment, when viewed in terms of the number of persons who can be seated at one time, serves as a basis for comparison. However, the use of more than one lunch period increases the serving capacity of the cafeteria,

and the average cost of equipment based on the number of persons who can be accommodated becomes a more reliable figure.

The original cost of the equipment, the cost per person in terms of the numbers that can be seated, and the cost based on the number of persons who can be accommodated are shown in Table IV. Seven schools which operate only one lunch period a day made

TABLE IV

ORIGINAL COST OF ENTIRE CAFETERIA EQUIPMENT IN TWENTY HIGH SCHOOLS, COST PER PERSON WHEN BASED ON SEATING CAPACITY, AND COST PER PERSON WHEN BASED ON NUMBER WHO CAN BE ACCOMMODATED

School	Cost of Equipment	Cost per Person Based on Seating Capacity	Cost per Person Accommodated
A	$ 6,000.00	$12.00	$ 4.00
B	43,580.00	57.95	19.32
D	1,500.00	10.00	10.00
F	5,000.00	22.02	7.34
G	16,314.50	27.19	13.59
H	13,000.00	54.17	18.06
I	5,000.00	13.89	4.63
J	4,500.00	36.00	12.00
K	12,109.32	33.64	11.21
L	5,000.00	33.33	33.33
M	4,000.00	13.33	4.44
N	2,200.00	11.00	11.00
O	6,766.00	51.29	51.29
P	15,000.00	35.71	11.90
R	6,768.64	35.25	8.81
S	6,000.00	13.33	13.33
T	5,000.00	31.25	31.25
V	2,500.00	17.86	5.95
W	12,000.00	24.00	24.00
X	4,000.00	30.77	15.38
Average	$ 8,811.92	$26.65	$11.63

the minimum use of their cafeteria equipment, and consequently the cost per person based on the number who can be accommodated remains the same as the cost per person based on the seating capacity. In the case of schools using two or more lunch periods daily, the cost of the equipment per pupil accommodated is considerably lowered. The average cost of equipment per person accommodated is $11.63.

EMPLOYEES

Cafeteria employees are of two types, namely, regular cafeteria employees and pupil employees. The latter are used, for the most part, only for the serving of meals, while the regular employees prepare and help serve the food.

The wages paid to regular cafeteria employees range from 25 to 83 cents an hour. The average wage paid is 39 cents. The total number of hours of service in the cafeterias range from 30 to 900 a week. The weekly average of the wages paid by these cafeterias for such service is $74.66. The average number of meals prepared and served a week for this amount of money is 2,075. The range is from 400 to 8,830 meals a week. The cost of preparation ranges from 2 cents to 12.8 cents a meal, with an average cost of 3.6 cents.

In all except two of the cafeterias pupils are employed for the serving of meals. They work on an average for only one class period a day. The average number of persons served by a pupil in a class period is 25. Remuneration for this service is usually a lunch of a stipulated cost, the average amount allowed being 26 cents. When cash is paid for pupil service, the average amount is 33 cents for a clock hour.

The relation existing between the amount of money received for a meal and the amount required for the preparation and serving of that meal is often the key indicating whether the cafeteria will show a deficit or a surplus. The relation existing between the cost of preparation and serving of each meal and the average amount received per meal is shown in Table V. This table shows that from a sixth to a half of the money received for each meal is used for preparation and serving.

MANAGEMENT

Data already reported make clear that the high-school cafeteria of today is a business of considerable size. The sums of money handled each year warrant the careful consideration of well-trained and experienced managers. It is found that 88 per cent of the managers of the cafeterias studied have had college training and that 64 per cent have received special training in the management of a school cafeteria.

The cafeteria is considered a supplementary enterprise of the school in sixteen of the twenty-five schools studied. Eight regard the cafeteria as a part of the school proper, and the cafeteria costs are budgeted along with the regular school costs. One school treats the cafeteria as a pupil enterprise. Twelve managers devote their entire time to the management of the cafeteria, but only four of this group are considered members of the faculty. The other managers teach a certain number of classes a day in addition to managing the cafeteria.

TABLE V

PERCENTAGE THAT COST OF PREPARATION AND SERVING PER MEAL IS OF AVERAGE AMOUNT RECEIVED PER MEAL IN TWENTY-THREE CAFETERIAS

School	Per Cent	School	Per Cent
A	18.9	O	32.0
B	26.0	P	18.3
C	26.0	Q	32.1
D	19.7	R	16.0
E	26.7	T	30.4
G	18.1	U	20.1
H	18.3	V	25.3
I	27.4	W	25.5
J	38.7	X	47.8
K	27.6	Y	49.0
L	26.2		
M	31.8	Average	29.4
N	50.1		

The average annual salary paid the cafeteria manager is $1,864.44. When allowance is made for the teaching done by some of the managers, the average amount of money expended yearly for cafeteria management is reduced to $1,231.81. The salaries and amounts paid for management, together with the cost of management per person served, are shown in Table VI. The average amounts expended annually for cafeteria management, when based on the number of persons served, range from $1.08 to $10.00. The average is $3.61. The percentage which the management cost is of the average receipts per person can be readily computed by referring to Table II. The range is from 2.1 per cent to 21.2 per cent. The

average amount spent annually for management is 11.0 per cent of the average receipts per person.

TABLE VI

ANNUAL SALARIES OF CAFETERIA MANAGERS, AMOUNTS CHARGEABLE TO CAFETERIA MANAGEMENT, AND AVERAGE AMOUNT SPENT FOR MANAGEMENT PER PERSON SERVED IN TWENTY-FOUR HIGH-SCHOOL CAFETERIAS

School	Annual Salary of Manager	Amount Chargeable to Cafeteria Management	Annual Cost per Person Served
A	$2,600.00	$1,950.00	$ 3.06
B	1,900.00	1,900.00	1.08
C	2,300.00	383.33	2.19
D	1,800.00	200.00	1.33
E	3,400.00	2,833.33	3.33
F	2,160.00	720.00	2.88
G	1,600.00	1,600.00	2.00
H	1,400.00	1,400.00	4.00
I	2,350.00	1,410.00	2.17
J	2,300.00	383.33	2.19
K	2,700.00	2,700.00	2.58
L	900.00	900.00	6.98
M	1,600.00	1,600.00	2.91
N	1,500.00	300.00	2.50
O	2,250.00	1,350.00	5.87
P	1,800.00	1,800.00	2.88
Q	1,900.00	1,900.00	6.33
R	1,161.70	1,161.70	2.11
T	1,800.00	600.00	6.00
U	1,250.00	1,250.00	3.13
V	675.00	675.00	1.93
W	1,500.00	1,500.00	10.00
X	2,000.00	666.66	4.44
Y	1,900.00	380.00	4.75
Average	$1,864.44	$1,231.81	$3.61

SUMMARY

A résumé of the findings shows that the average salary of the cafeteria manager is $1,864.44. The typical manager is a woman who has had college training and teaches one or two classes a day. The teaching done reduces the cost of management to $1,231.81. The cafeteria manager is considered a member of the faculty, and the cafeteria costs are regarded as regular school costs. The manag-

er regulates the food costs but is always under the supervision of the head of the school. The cafeteria bills are paid directly by the manager, and in practically all cases advantage can be taken of the usual discounts allowed for cash. A financial statement is made from month to month, and prices are regulated so as not to create too large a surplus or to require operating at a deficit. The manager employs pupil assistants for the serving of meals when the greatest need occurs. Pupils act as cashiers in practically all cafeterias. Only a few schools use members of the faculty for this purpose. Seasonal buying is also practiced in the majority of schools. Quantity buying is used with the privilege of partial deliveries whenever ample storage facilities are not available.

SELECTED REFERENCES ON THE ORGANIZATION OF SECONDARY EDUCATION[1]

GRAYSON N. KEFAUVER AND HAROLD C. HAND
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The items presented below have been selected from an abstracted list of well over two hundred references which have appeared since March 31, 1932, including books, periodicals, and bulletins. Three criteria were employed in making the selections, namely, (1) importance of the problem treated, (2) type of treatment accorded the problem, and (3) availability of the materials to the worker in the field.

An attempt has been made to distribute the references to the different categories comprehended by the organization of secondary education. Those employed are (1) district organization, (2) vertical organization and articulation, (3) junior high school, (4) junior college, (5) part-time schools and co-operative courses, (6) summer high school, (7) the small high school, and (8) provisions for special groups.

DISTRICT ORGANIZATION

427. "The Confusion in District Organization for Secondary Education," *School Review*, XL (December, 1932), 728–30.

A brief analysis and description of patterns of district organization that have been devised by different states for the purpose of making secondary education available. A summary of Part I of Item 428 in this list.

428. ENGELHARDT, FRED; ZEIGEL, WILLIAM H., JR.; PROCTOR, WILLIAM M.; and MAYO, SCOVEL S. *District Organization and Secondary Education*. National Survey of Secondary Education Monograph No. 8. United States Office of Education Bulletin No. 17, 1932. Pp. viii+208.

A descriptive investigation and discussion of (1) district organization in the United States, (2) school and district organization in California, and (3) school and district organization in Illinois.

[1] This is one of a cycle of twenty lists of selected references covering all major aspects of the field of education which is being published co-operatively by the *School Review* and the *Elementary School Journal*.

VERTICAL ORGANIZATION AND ARTICULATION[1]

429. EBY, FREDERICK. "The Four-Year Junior College," *Junior College Journal*, II (May, 1932), 471–89.

A report of a questionnaire study in which 449 junior-college administrators were canvassed. Presents opinions of administrators on a number of issues involved in the controversy concerning the relative merits of the two-year and the four-year institution.

430. ENGELHARDT, FRED. "What Organization Is Best for the Secondary-School Division of a Public-School System?" *American School Board Journal*, LXXXV (December, 1932), 19–20.

Suggests that there will be a decrease in secondary-school enrolments and presents plans for modifying practices in school organization.

431. FORSYTHE, L. L. "Problems Connected with the Transition of Junior-High-School Students to the Senior High School," *American School Board Journal*, LXXXVI (April, 1933), 25–26, 59.

An interpretation of the problem of articulation of junior and senior high schools with suggestions for improvement.

432. GRACE, ALONZO G. "Choosing an Organization Plan," *Nation's Schools*, IX (May, 1932), 29–32.

A condensed statement of the advantages of three plans (6-6, 6-3-3, and 8-4-4) of organizing a school system.

433. HENDRICKS, JAKE J. "Special Articulating Function of the Junior High School," *School Executives Magazine*, LII (September, 1932), 18–19.

A discussion of methods for articulating the materials of the junior high school with the grades below and above this unit.

434. KILZER, L. R. "Some Advantages and Disadvantages of the Six-Year High School," *American School Board Journal*, LXXXV (November, 1932), 24–26, 76; (December, 1932), 31.

A discussion of advantages and disadvantages believed to be associated with the six-year school. Some published studies are drawn on to support the statements made.

435. KILZER, L. R. "Organizing the Six-Year High School," *American School Board Journal*, LXXXVI (February, 1933), 19–20, 64.

A discussion of the problems associated with the administration of the six-year high school and suggestions for proper administration.

[1] See also Item 6 in the list of selected references appearing in the January, 1933, number of the *Elementary School Journal* and Item 377 in the September, 1933, number of the *School Review*.

436. PROCTOR, WILLIAM MARTIN. *The Six-four-four Plan of School Organization in Pasadena, California.* Pasadena, California: Board of Education of the Pasadena City Schools, 1933. Pp. 202.

Reports the findings of research committees recruited from the Pasadena school staff concerning the extent to which the original purposes of the 6-4-4 plan were being carried out and the extent to which the advantages claimed for the plan had materialized.

437. PROCTOR, WILLIAM MARTIN. "How the Six-four-four Plan Is Working in Three California Communities," *Proceedings of the Seventeenth Annual Meeting of the Department of Secondary-School Principals*, pp. 247–62. Bulletin of the Department of Secondary-School Principals, No. 45. Berwyn, Illinois: Department of Secondary-School Principals of the National Education Association (H. V. Church, Executive Secretary), 1933.

Presents evidence in support of the contention that the 6-4-4 organization has been a marked success in Pasadena, Ventura, and Compton, California.

438. "Report on Institutional Experiments, 1932," *North Central Association Quarterly*, VII (September, 1932), 172–84.

A report of committees supervising experiments at Cornell College, Mt. Vernon, Iowa; Joliet Township Junior College, Joliet, Illinois; Kansas City, Missouri; Stephens College, Columbia, Missouri; and Tulsa, Oklahoma. Includes Suzzallo's discussion of the experiments.

439. SEXSON, JOHN A. "Six-four-four in Pasadena," *Journal of Education*, CXV (April 18, 1932), 312–14.

Discusses the 6-4-4 type of organization with special attention to the four-year junior high school.

440. "Special Reorganizations of the School System," *School Review*, XL (June, 1932), 401–7.

A brief description of experimental and other special reorganizations of school systems including junior-college grades. The reorganizations are considered in two groups, namely, those establishing longer school units (for example, the 6-4-4 plan) and those aiming at the saving of time.

441. THOMPSON, O. SCOTT. "The Union High School District and the 6-4-4 Type of Organization," *California Quarterly of Secondary Education*, VIII (January, 1933), 154–58.

Gives reasons for the adoption of the 6-4-4 type of organization in the Compton Union District of Secondary Schools, Compton, California.

442. UNZICKER, S. P. "A Study of Acceleration in the Junior High School," *School Review*, XL (May, 1932), 346–56.

A study of the achievement in Grade IX of pupils of superior ability who had been permitted to do the work of Grades VII and VIII in one year in comparison with the achievement of a group of equal ability who had taken two years for the work.

Junior High School[1]

443. Beatley, Bancroft. *Achievement in the Junior High School.* Harvard Studies in Education, Vol. XVIII. Cambridge, Massachusetts: Harvard University Press, 1932. Pp. xiv+92.

A comparison of growth in achievement in reading, language, arithmetic, and certain aspects of science and the social studies from Grade VII to Grade IX in six Massachusetts school systems, three of which are operated on the 6-3-3 plan and three on the 8-4 plan.

444. Clark, Ronald W. "The Junior High School in Illinois outside Chicago," *School Review*, XLI (May, 1933), 337–46.

A study of the status of junior high schools in Illinois outside Chicago. Data were gathered by visits to all the schools represented.

445. Davis, Calvin O. "Is the Junior High School a Success or a Failure?" *Nation's Schools*, XI (February, 1933), 21–24.

A discussion of the relative merits of the segregated junior high school and the six-year high school. Trends in the growth of each are reported.

446. Davis, Calvin O. "Trends in Junior-High-School Development," *Junior-Senior High School Clearing House*, VII (February, 1933), 340–47.

Sketches trends in junior high school development from 1922 to 1928. Gives data concerning (1) segregated junior high schools, (2) undivided six-year schools, (3) divided junior-senior high schools, and (4) senior high schools.

447. Glass, James M. "Tested and Acceptable Philosophy of the Junior-High-School Movement," *Junior-Senior High School Clearing House*, VII (February, 1933), 329–39.

A discussion of the philosophy believed by the author to be acceptable for the junior high school.

448. Spaulding, Francis T. "The Reorganized Secondary School," *Harvard Teachers Record*, II (October, 1932), 170–78.

Sets forth the more important facts revealed in data gathered in the National Survey of Secondary Education bearing on (1) the effects of the junior high school movement on practice in school organization, (2) the comparative merits of reorganized and conventionally organized schools, and (3) the relative promise of various types of junior and senior high schools.

449. Spaulding, F. T., and Frederick, O. I. "The Junior High School Movement in the Year 1930," *School Review*, XLI (January, 1933), 15–26.

The status of junior high school reorganization in 1930 as shown by the National Survey of Secondary Education, including the numbers of schools with the different combinations of grades and the trends in recent years in the proportions of these combinations.

[1] See also Item 5 in the list of selected references appearing in the January, 1933, *School Review*.

450. VAN COTT, HARRISON H. "The Junior High School and Adolescent Youth," *Junior-Senior High School Clearing House*, VII (March, 1933), 429–34.

An attempt to "evaluate the junior high school program through a consideration of adolescent nature, the phases of the junior high school program, and an appraisal of the program in terms of its harmonies and discords with adolescent needs."

451. WIGGINS, D. M. "Junior High Schools of Texas," *School Review*, XL (November, 1932), 687–92.

A history of the junior high school in Texas giving data on types of organization and length of class periods.

JUNIOR COLLEGE

452. ANDREWS, ARTHUR. "Development of Junior Colleges in Michigan," *Junior College Journal*, II (June, 1932), 513–17.

Traces the origin of the junior-college idea and gives accounts of the earliest junior colleges in Michigan. Includes a discussion of curriculums offered in these early institutions. The development of a state organization of junior colleges is sketched.

453. BELL, GEORGE H. "Follow-up Study of Junior College Students," *Junior College Journal*, II (April, 1932), 378–80.

A report of a follow-up study of former students of Citrus Junior College, Azusa, California, made in 1930. Usable replies were received from 52 per cent of the 557 students approached. Gives data concerning attendance at other colleges, occupational experience, and opinions concerning efficiency of preparation received in the junior college.

454. CHADWICK, RAYMOND D. "Is a Junior College Justified in Duluth?" *Junior College Journal*, II (April, 1932), 381–84.

A justification of the junior college in Duluth in terms of needs met, size, and wealth of community.

455. CHAMBERS, M. M. "Junior College Statutes in the Middle West," *Junior College Journal*, III (January, 1933), 185–90.

A discussion of the statutory provisions concerning the junior college in operation in each of the fourteen states in which the establishment of public junior colleges by local school districts has been expressly authorized.

456. CREAGER, J. O. "The Junior College in American Education," *Junior College Journal*, III (May, 1933), 426–34.

Interprets the kind of service which the junior college is rendering. Proposes six functions for the junior college.

457. DENWORTH, KATHARINE M. "Preparatory Function of the Junior College," *Junior College Journal*, II (May, 1932), 456–63.

Raises a number of questions or issues concerning the preparatory function. Argues that the junior college should not content itself with the duplicating

of the first two years of college work. Suggests adoption of the procedures employed in the junior college at Bradford, Massachusetts, in an attempt to meet the needs of various groups of students.

458. DVORAK, AUGUST, and MERRICK, N. L. "How Large Should a Junior College Be?" *Junior College Journal*, III (January, 1933), 194–98.

Sketches the undesirable consequences frequently attending the establishment of junior colleges with small enrolments and limited endowments for other financial support.

459. EELLS, WALTER CROSBY. "The Tax Supported Junior College during the Next Decade," *Proceedings of the Seventeenth Annual Meeting of the Department of Secondary-School Principals*, pp. 147–65. Bulletin of the Department of Secondary-School Principals, No. 45. Berwyn, Illinois: Department of Secondary-School Principals of the National Education Association (H. V. Church, Executive Secretary), 1933.

Discusses probable trends in terms of number of junior colleges, gains in enrolments, changes in curriculums, types of organization, and extent of financial support.

460. FOSTER, FREDERICK M. "The Formation of a Junior College in Southern Alameda County," *California Quarterly of Secondary Education*, VII (April, 1932), 291–300.

A report of a study made for the purpose of determining the advisability of establishing a junior college in a given locality. Exemplifies the type of preliminary investigation which should be made.

461. HALE, WYATT W. "Success of Junior College Graduates," *Junior College Journal*, II (May, 1932), 464–70.

A study of 12,393 students who graduated from 116 junior colleges in the years 1926–29. Data are reported on (1) the length of time junior-college graduates continue in the university and (2) the comparative scholastic achievements of junior-college and non–junior-college students in the university.

462. KELLY, FREDERICK J. "Fusing of High School and College," *Junior College Journal*, II (May, 1932), 413–20.

Points out five ways in which the line marking the distinction between high school and college is being obliterated by the junior college. These are characterized as (1) continuous process of training, (2) student-centered curriculum, (3) higher quality of teaching, (4) scientific measurement, and (5) research in institutional planning.

463. NORRIS, MARY R. "Presenting Ward-Belmont," *Junior College Journal*, II (April, 1932), 368–70.

A description of the plant, educational opportunities, and the social life of the Ward-Belmont School, Nashville, Tennessee. The philosophy of the school is suggested throughout.

464. PEMBERTON, H. EARL. "Does the Junior College Popularize Education?" *Junior College Journal*, III (December, 1932), 129–33.

An analysis of the extent to which four junior colleges in Washington have popularized higher education in their respective communities.

465. ROACH, WILLIAM LLOYD. "Follow-up Study of San Mateo Students," *Junior College Journal*, II (June, 1932), 538–41.

A follow-up study of more than fifteen hundred former students in terms of extent of transfer to universities, success in the university, and occupations entered.

466. SEARS, JESSE B. *Modesto Junior College Survey*. Modesto, California: Board of Education, 1932. Pp. xvi+260.

A comprehensive survey of the junior college at Modesto, California, with recommendations for improvement.

467. SNYDER, WILLIAM H. "The Distinctive Status of the Junior College," *Junior College Journal*, III (February, 1933), 235–39.

Presents arguments in support of the conviction that junior college should be regarded not as secondary but as higher education. A good discussion of the various educational experiences which the junior college should provide for its students.

468. WEBB, PAUL E. "The Holding Power of Junior Colleges," *Junior College Journal*, III (January, 1933), 179–84.

An analysis of the records of 12,022 students who entered 31 California junior colleges in 1928 and 1929.

469. ZOOK, GEORGE F. "A State System of Public Junior Colleges," *Journal of the National Education Association*, XXII (February, 1933), 45–46.

Discusses the desirability of establishing state systems of public junior colleges.

PART-TIME SCHOOLS AND CO-OPERATIVE COURSES

470. DEAM, THOMAS M. "Value of the Evening School," *School Executives Magazine*, LI (July, 1932), 482–83, 490.

A discussion of the evening school of the Joliet Township High School and Junior College, Joliet, Illinois. Gives facts concerning the educational opportunities afforded, the number and the types of students enrolled, the subjects offered, and the cost.

471. HARDSTEIN, ROSE M. "Value of the Evening Junior College," *Sierra Educational News*, XXIX (February, 1933), 53.

Suggests the desirability of establishing a regular two-year evening junior college.

472. HILES, RAYMOND L. "An Experiment in Vocational Education," *Texas Outlook*, XVI (June, 1932), 15–16.

Describes an experiment in part-time co-operative work in a high school of 250 pupils in a small community. Reports reactions of employers and pupils to the plan.

473. JORDAN, MILLARD LEROY. "Co-operative Education," *School and Society*, XXXVI (July 9, 1932), 60–64.

A comparative study of co-operative and non-co-operative pupils in the Nash Preparatory School, Cleveland, Ohio, in terms of social background, intelligence, attitudes, interests, and achievement in school work.

474. LYNN, J. V. "Elements of Response to Federal Stimulus in Vocational Education," *Industrial Arts and Vocational Education*, XXI (June, 1932), 177–79.

Discusses growth of evening, part-time, and all-day vocational education under federal stimulus.

475. MAYMAN, J. EDWARD. "The Evolution of the Continuation School in New York City," *School Review*, XLI (March, 1933), 193–205.

Traces the origin and the growth of the continuation-school movement in New York City. Sketches new departure in organization of continuation schools possible in a large city. Discusses the special objectives and the special activities desirable in a good continuation school.

476. MILLER, ROLAND M. "An Index of Holding Power for Adult Evening Schools," *American School Board Journal*, LXXXV (October, 1932), 31–32.

Report of a study of holding power made in an adult evening school in Sacramento, California.

SUMMER HIGH SCHOOL

477. DE GALAN, F. S. "Some Thoughts on Summer Schools," *Junior-Senior High School Clearing House*, VI (May, 1932), 524–28.

Suggests plans for organizing and administering summer high schools. Applicable to situations in larger cities.

478. MCLAREN, LOUISE LEONARD. "Workers' Summer Schools," *Vocational Guidance Magazine*, XI (May, 1933), 351–53.

Gives a general description of the organization and activities of the half-dozen or so workers' summer schools in the United States.

479. MURPHY, C. R. "How One City Conducts a Summer School without Public Expense," *American School Board Journal*, LXXXIV (April, 1932), 51, 93–94.

Presents the plan worked out and applied in Bay City, Michigan.

THE SMALL HIGH SCHOOL

480. "Cardinal Conclusions concerning Small High Schools," *School Review*, XLI (June, 1933), 401–4.

Gives two major implications from a project of the National Survey of Secondary Education comparing selected and unselected small high schools.

481. FERRISS, EMERY N. "Curriculum Demands on the Secondary Schools of the Future Affecting the Size of the Local School District," *Education*, LIII (January, 1933), 290–97.

Examines curriculum trends and concludes that the six-year secondary school of the future should have a pupil enrolment of at least 250–400.

PROVISIONS FOR SPECIAL GROUPS

482. JACOBSEN, EINAR W. *Educational Opportunities Provided for Postgraduate Students in Public High Schools.* Teachers College Contributions to Education, No. 523. New York: Teachers College, Columbia University, 1932. Pp. vi+74.

A survey of the increase in the number of postgraduate students and the provisions made by 525 secondary schools for postgraduate students. The provision of educational service for postgraduate students is shown to be of increasing importance.

483. LONG, HOLLIS MOODY. *Public Secondary Education for Negroes in North Carolina.* Teachers College Contributions to Education, No. 529. New York: Teachers College, Columbia University, 1932. Pp. xii+116.

A survey of the program of secondary education for negroes in North Carolina and the social status, abilities, achievement, interests, and aims of the pupils.

Educational Writings

REVIEWS AND BOOK NOTES

A worthy contribution on curriculum revision.—Breaking away from the time-honored tradition of delineating high-school offerings in terms of quantitative units, the North Central Association now presents in book form the results of fifteen years of work by its Committee on Standards for Use in the Reorganization of Secondary School Curricula[1] in an attempt to develop qualitative units of high-school offerings. The point of view from which the committee attacked its problem and the spirit in which it has carried on the work are entirely in keeping with the general policy of the association, namely, that the life-preparatory motive is primary in the determination of high-school curriculums.

The committee began its work on the assumption that educational objectives are standards in the light of which curriculum material and activities ought to be selected. It soon realized the necessity of analyzing ultimate objectives into immediate objectives which would be sufficiently specific to serve as direct aids to teachers engaged in selecting course content. In order to aid teachers in such a use of the objectives, the committee decided that the most fruitful way would be to suggest, in the light of the objectives, types of material considered most desirable for different courses and to put these materials into the hands of teachers and administrators through the reports of the work of the commission. This plan has been followed over a period of years, and now a selection of this material has been made and published in book form.

The first twenty-eight pages are devoted to a discussion of the manner in which the committee carried on its work and to a presentation of general objectives for secondary education and the consequent immediate objectives implied therein. The next eighteen pages present illustrations of the manner in which the suggestions and the objectives have been used by schools in the association for the revision of courses. Pages 47 to 375 are given over to detailed reports of the committee's subcommittees on subject matter. These reports set up units of material in certain subject-matter fields which seem to be usable for the purpose of realizing the objectives of secondary education as stated by the committee. Content materials, or elaboration of objectives as applied to the subject of

[1] *High School Curriculum Reorganization.* Edited by L. W. Webb (Chairman) and Others. Ann Arbor, Michigan: North Central Association of Colleges and Secondary Schools, 1933. Pp. viii+396.

study, are thus tentatively suggested for courses in art, music, English, Latin, French, Spanish, German, general science, biology, chemistry, physics, mathematics, social studies, home economics, health and physical education, and extracurriculum activities.

As might be expected, these reports are uneven in quantity and completeness, ranging from mere expansion of objectives in physical education, biology, and general science to very complete outlines in the fields of music, English, and foreign languages. The contribution lies not in the actual content selected, however, but in the fact that here are concrete illustrations of how it is possible to use educational objectives as criteria by which to select the content for use in high-school courses. The lack of identity in form of presentation, the variation in manner of arrangement, and other individualistic elements in the book are all virtues in that they serve to illustrate how the fundamental procedure of selecting course content with objectives as guides can be made flexible in application. The objectives, both the ultimate and the immediate, are an interesting and stimulating variation from the seven cardinal principles and the four set out by the Sixth Yearbook of the Department of Superintendence.

There are hints that the committee members themselves have not completely sensed the implication of their own point of view, namely, that the educational values of subject matter are not an intrinsic part of the material (and hence are universal) but that these values come about from the use which can be made of the material to stimulate the learner to react in certain desired and stated directions (and hence are relative, that is, dependent on the objectives to be attained and the individual who will study the material). There is also noticeable in many of the subcommittee reports a paucity of suggestions in the course content for participation in human activities with a consequent overemphasis on knowledge about human activities. Such criticisms are picayune, however, in comparison with the general excellence with which the main purpose of the committee has been accomplished.

Every group at work on the revision of high-school offerings should have this book for study, not because of the subject matter which it suggests for different high-school courses, but because of the value of the illustrations showing how it is possible to analyze objectives to the point where they can function as guides by which to select course content. The committee has successfully demonstrated that analysis techniques are usable in curriculum revision. There still remain the tasks of developing and refining analysis techniques and of developing and refining an experimental technique by which to test the courses when once constructed according to analysis techniques.

L. A. Williams

University of California

Bigger and better surveys in higher education.—The application of scientific method to critical appraisals of our institutions of higher education is well exemplified in the increasing number and the improved quality of surveys which

are being made in this field. Especially at a time when every college and university is confronted with the necessity of scrutinizing its functions with unusual care, a scientific study of a large number of the major educational problems of one of our greatest American universities by competent educational investigators and diagnosticians is particularly significant.

Coming, as it does, as the climax of his many years of experience in survey work in institutions of higher learning, during which he has participated in almost one hundred such surveys, F. W. Reeves, with the aid of an able staff of associates, in his report of the survey of the University of Chicago[1] has produced a series of volumes that may fairly be characterized as "bigger and better" in this field.

This is no ordinary survey report. It required over three years of continuous work; yet it does not claim completeness. It modestly presents only forty or fifty "selected topics" or "projects"; yet the report is comprised not in a single volume but in no less than twelve substantial volumes, totaling 3,166 pages, with 334 figures and 509 tables. The extensive land-grant college survey of 51 outstanding institutions was published in 1930 in only two volumes of some 1,900 pages, although it is fair to state that the page size was larger than that of the report of the Chicago study.

The scope of the report can best be presented compactly, although inadequately, by citing the titles of the volumes: I, "Trends in University Growth"; II, "The Organization and Administration of the University"; III, "The University Faculty"; IV, "Instructional Problems in the University"; V, "Admission and Retention of University Students"; VI, "The Alumni of the Colleges"; VII, "The University Libraries"; VIII, "University Extension Services"; IX, "University Plant Facilities"; X, "Some University Student Problems"; XI, "Class Size and University Costs"; and XII, "The Oriental Institute."

It would have been impossible, of course, for one man to assemble, present, and interpret such a mass of information. Ten major authors of the twelve volumes co-operated with the director of the survey, Dr. Reeves. In addition, many others are credited with special chapters or with extensive reports upon which such chapters are based. This difference in authorship makes for some lack of unity and variety in style. Some volumes are largely factual; others are prevailingly descriptive or theoretical. On the whole, however, there is surprising unity in spite of the composite authorship. Unity has been achieved largely because Floyd W. Reeves and John Dale Russell are co-authors of ten of the twelve volumes of the series, although in only three do they assume full responsibility of authorship. Frederick J. Kelly appears as co-author of three volumes, A. J. Klein and Nelson B. Henry of two each, while Ernest C. Miller, George A. Works, W. E. Peik, and C. O. Thompson are co-authors of one volume each.

In two volumes Drs. Reeves and Russell did not assume the responsibility

[1] Floyd W. Reeves and Others, *The University of Chicago Survey*, Vols. I–XII. Chicago: University of Chicago Press, 1933.

even for partial authorship, namely, the volume on the libraries, written by M. Llewellyn Raney, Director of University Libraries, and the volume on the Oriental Institute, by James H. Breasted, Director of the Institute. These two volumes are exceedingly well-written and fascinating descriptive statements of the problems and achievements of the libraries and of the archaeological investigations of the Oriental Institute, but they are not surveys in the ordinary sense of the term. One cannot but wonder whether the directors themselves can have sufficient objectivity and impersonality in their points of view to make an impartial evaluation of their own handiwork.

A mass of significant information has been faithfully collected, skilfully presented, and often clearly interpreted. On the whole, relatively few recommendations have been made. In only four volumes (II, VII, VIII, and X) are the recommendations of sufficient importance to warrant a place in the Table of Contents, although occasional recommendations are found in other volumes. This survey may be characterized as essentially a fact-finding survey. This characteristic may be a strength or a weakness, depending on the point of view. To the reviewer it seems somewhat unfortunate that a larger number of constructive recommendations for future development are not given. The point of view of the surveyors, however, is well expressed in the conclusion to Volume I:

> Throughout this study there has been little or no attempt to point out the implication of trends for the guidance of the institution, although there are many obvious points at which the data presented could properly be given earnest consideration in developing the future policies of the University. It is the opinion of the survey staff that the interpretation of these trends and the application to future policies are matters that concern the Board of Trustees, administration, and faculty of the University [p. 207].

While this statement applies specifically to the contents of Volume I, it seems to express the general philosophy of the greater part of the whole survey.

Although over five hundred tables, loaded with facts, are found in ten of the twelve volumes of the report (reaching a maximum of 128 in Volume V), they are not the forbidding, detailed tables sometimes found, which repel rather than invite attention. With rare judgment the authors have summarized the essential information and general tendencies in compact, clearly printed, summary tables, the meaning of which can be grasped at a glance. Such tables do not just happen; they represent skilful design, which makes them statistically alluring. When the authors considered that more extensive, detailed tables were needed for special study or for reference, they placed these in appendixes. In spite of the more than three thousand pages, each chapter and division, since it is not overloaded with facts, reads easily and clearly. Frequent summaries enable the reader to secure the substance of each investigation in compact form.

Much of this extensive report will be of interest chiefly to university administrators and faculty members or to students of college and university administration who are particularly concerned with such topics as research work, university extension services, university costs, the university faculty (treated in an admirably informative volume), or the alumni. One wonders, by the way,

why so few college and university surveys have thought it worth while to pay any attention to the alumni. Is it not true in the educational realm that "by their fruits ye shall know them"? A factory is judged by its product. Is a university exempt from the same principle?

Many sections of the volumes will be of particular interest to men whose chief interest and activity are in the field of secondary education. Such, for example, are the sections on "The Admission of Freshmen" (Volume V), where we learn that "the data of this study clearly suggest the advisability of some modification in the plan of selecting entering Freshmen" (p. 71); or the section on "The Relationship between the Specialization in the Secondary School and Success in College Courses" (Volume V), which after extensive statistical analysis leads to the conclusion "that, when intelligence is taken into account, high-school and junior-college preparation in any of the standard academic subjects here studied is about equally good preparation for later college work" (p. 377). All of Volume X, "Some University Student Problems," will be of interest to high-school counselors and much of Volume IV, "Instructional Problems in the University," as well. On the other hand, the University High School, one of the Laboratory Schools of the University, a critical and comprehensive analysis of which would have especially interested many readers of this journal, is treated very inadequately in two or three studies of specialized topics.

An excellent index to each volume facilitates ready reference to any topic—a feature too often missing in many published surveys. Altogether, this survey is an outstanding piece of work in the field. It will reflect distinct credit on the director and his associates and will be read and studied with unusual interest and profit in all parts of the country.

WALTER CROSBY EELLS

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A new treatment of teachers' extra-instructional problems.—Opinions in the educational profession differ greatly both concerning the materials which should be included in a course on classroom management and concerning the desirability of giving such a course at all. These uncertainties have caused the subject to lose much of the respect which it formerly enjoyed. A recent addition[1] to the textbooks in this field will, however, help to minimize these difficulties and to place the subject in a better light.

The field of classroom management is defined in the beginning of the book with unusual precision. It is marked off sharply from methods of instruction in the subjects of study and from the wider administrative responsibilities of the teacher and is definitely described as including the extra-instructional problems of the teacher in the classroom. After delimiting the subject, the author in the first of the seventeen chapters of the book sets forth illuminatingly the relation

[1] Frederick S. Breed, *Classroom Organization and Management.* Yonkers-on-Hudson, New York: World Book Co., 1933. Pp. xvi+472. $2.00.

of classroom management to scientific management in other fields of activity. Chapters ii and iii deal with the nature, uses, and techniques of standardized tests. What to do about individual differences is the common theme of the next four chapters: "Miscellaneous Grouping of Pupils," "Homogeneous Grouping," "The Individual System of Instruction," and "Organizing Supervised Study." Five of the chapters, "How Large Should Classes Be?" "Constructing the Curriculum," "Sponsoring Extra-curricular Activities," "Constructing the New-Type Examinations," and "Reconstructing the Behavior of Pupils," either bring in important topics not ordinarily included in the field or give old topics a decidedly novel treatment. The remaining five chapters deal with the usual subjects of promotion, schedules, marks, records, and routine activities. In three chapters only, those on extra-curriculum activities, schedule-making, and the size of classes, was it found necessary to treat separately the problems of elementary- and secondary-school teachers.

Each chapter begins with three challenging problems to invoke the reader's interest. The second problem in chapter xvii, for example, is "What do investigations show in regard to the possibility of improving pupils in character traits?" (p. 419). There are in each chapter, for the guidance of the reader, numerous precisely worded side-heads, such as "Reliability of groupings based on intelligence" (p. 94). Footnotes give references to the many investigations which are used in the text. Each chapter concludes with a clear and concise summary of its main points, which is followed by a bibliography consisting of five or six carefully selected, annotated "Suggestions for Required Reading" and a larger number of "Suggestions for Optional Reading." Throughout, the language is clear and easy to follow, even in the discussion of such technical devices as the accomplishment quotient.

The striking characteristic of the book is its persistent devotion to the idea that the most worth-while materials are those that are supported by quantitative evidence. On the problems of classroom management as the author envisages them, there is now available, fortunately, a large amount of such material. Fifty-two tables, thirty-one figures, many numbered tabulations of ideas or steps in a process, and innumerable salient quotations attest the uncommon extent to which reliance is placed on the findings of studies to evaluate the plans and methods that are discussed. It is significant of his attitude that the author, after describing the Dalton system of individual instruction and presenting Miss Parkhurst's claims for it, promptly leaves the subject with the remark that "we are still waiting for scientific evidence relating to the efficiency of the Dalton plan" (p. 132) and proceeds to give a comparatively elaborate presentation of the evidence on the efficiency of the Winnetka technique. In these respects the book is more like a textbook on educational psychology than the usual work in classroom management. The availability of a book of this character should do much both to increase the interest of teachers in scientific management and to lift the subject itself to a higher dignity in teacher-training circles.

The author shows himself fully equal to the difficult task of summarizing and

evaluating the most substantial literature on complicated subjects, such as homogeneous grouping, in the space of a single chapter. Balance and poise characterize his treatment of controversial subjects, such as the optimum size of classes. Competent members of the profession, doubtless, will wish that this or that aspect of various topics had been emphasized or treated differently. There are some, for example, who will hold that the evidence for increasing the size of classes is based on measurements of too small a segment of the outcomes of instruction to warrant even the cautious recommendations which the author ventures to make and that the recent increases in the size of classes are attributable *very much more* to the pressure of enrolment and to lack of money than to convictions based on scientific evidence.

The sound and scholarly merits of the book, however, will recommend it to all as a substantial addition to the materials in its field. Few better works are available for reading circles of teachers in service. Every teacher of the subject in teacher-training institutions should examine this book thoughtfully with reference to the textbook needs of his classes.

PAUL W. TERRY

UNIVERSITY OF ALABAMA

A manual of instruction for administering a testing program.—There has long been a need for such a book as has been written by Clifford Woody and Paul V. Sangren.[1] Most of the earlier books in the field of measurement have dealt with the techniques employed in developing tests or have included too much statistical material for the person who is not a specialist in the field. The book under review is designed to aid persons who are administering and directing testing programs in schools of small or moderate size; in large schools the work would no doubt be in charge of research directors. The authors have a clear conception of the entire testing program and its difficulties. Many of the problems discussed in the book are taken from the experiences of the authors and from questions addressed to them as directors of research bureaus.

The eleven chapters in the book treat all the important phases of administering a testing program from its inception to the completion of the report giving the results of the measurements. Chapter i gives a brief discussion of the meaning of the testing movement. Chapter ii states the basic purposes of the testing program:

> In general, testing programs are undertaken for two distinct purposes—for appraisal and for the improvement of instruction. Stated somewhat differently, it may be said that testing programs are undertaken for the purpose of either administrative and supervisory evaluation or pedagogical diagnosis and remedial prescription. In measurement for appraisal, interest is primarily in determining the existing levels of achievement; in measurement for improvement of instruction, interest is primarily in determining the nature of the pupil's responses and his method of learning [pp. 26–27].

[1] Clifford Woody and Paul V. Sangren, *Administration of the Testing Program.* Yonkers-on-Hudson, New York: World Book Co., 1932. Pp. xii+398. $2.00.

The authors point out that, in order to accomplish these purposes, the person in charge of the testing program must take into account such matters as the experience of the teachers in the use of tests, the attitude of the community toward tests, facilities for giving tests, what is to be tested, and the type of test to use.

Chapter iii discusses the question whether teachers should take an active part in giving and scoring tests when the results are to be used for the purpose of improving the instruction. Chapters iv, v, and vi treat in a practical and a concrete manner the tabulation and the presentation of test results. Comparisons of data by grades, age groups, races, schools, teaching methods, localities, and sex are a few of the methods suggested. Illustrative tables and graphs are given showing how test results can be presented effectively. Chapters vii and viii take up possible ways of improving instruction through administrative and pedagogical changes. The authors state:

> Improvement of instruction results from two different types of changes—administrative changes and pedagogical changes. Administrative changes refer to modifications in the school machinery, such as the sectioning of pupils on the basis of mental ability, the reclassification of pupils, the establishment of special classes or ungraded rooms, or the establishment of special curriculums for special groups of pupils. These administrative changes are undertaken in order to make the conditions for learning as favorable as possible, but unless they result in a greater amount of desirable educational product than is usually attained, the changes are not justified. Pedagogical changes refer to changes in the methods of instruction involved in the actual teaching of pupils, such as better assignments, better presentation of subject matter, and better application of the principles of psychology in the actual teaching process. Administrative changes may facilitate learning through providing conditions more conducive to it, but pedagogical changes involved in the actual process of teaching pupils are fundamental to real improvement in instruction [p. 221].

A concrete example is given of how the reclassification method may be used without disturbing the gradation. In this method the teacher groups the pupils in her own room according to their instructional needs. The advantage of reclassifying the pupils without disturbing the gradation is that the arrangement is more temporary and flexible than is the plan in which the pupils are definitely classified according to mental age or grades.

The last three chapters are entitled "Acquainting the Public with Existing Levels of Efficiency within the Schools," "Dangers To Be Avoided in Using Tests and Test Results," and "Present Tendencies in Measurement." The authors recommend that the public be acquainted with the nature of the tests used and the results of testing. This opinion differs from that of some specialists, who say, "Write for experts; the lay people will not understand you no matter how you write." The suggestions concerning dangers to be avoided are timely. For example, the authors advise against undertaking an unnecessarily extensive testing program, against taking too much of the teacher's time for giving and scoring tests, against inferring too much from a single performance, and against judging the teacher's ability by the test results.

Throughout the book the authors treat the material in such a way that it is intelligible to persons who have not had courses in tests and measurements. They illustrate principles concretely in the body of the textbook instead of referring the reader to other books. For example, in chapter v, "Presentation of Results Obtained from the Testing Program," the authors point out the value of expressing results concretely and give numerous illustrations. Another good technique used by the authors is their plan of giving the formulas needed for understanding the discussion in as simple terms as possible rather than using algebraic terms which only specialists can comprehend.

This book gives an excellent treatment of the subject and has few defects. The defects result from failure to include certain materials rather than from the selection of poor materials. For example, in their discussion of the interpretation of tabulations and results, the authors give only one formula for certain comparisons, such as the standard deviation and the coefficient of correlation. This inclusion of only one formula may confuse those for whom the book is intended as they may be led to think there is no other formula. A second defect is the failure to cite a sufficient number of references in which readers may find additional material. Both these defects are minor, however, in a volume which has answered the need for a concrete, practical, well-organized, and well-written book to aid the administrator in solving problems encountered in administering the testing program in his school system.

F. A. Beu

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Sound pictures as teaching aids.—A recent contribution[1] to education from Teachers College, Columbia University, serves four ends: (1) It presents a criticism of the more important research work being done with educational sound pictures. (2) It furnishes data on, and makes comparisons of, the relative effectiveness of teaching with the aid of certain educational talking pictures in the fields of natural science (Grade V) and of music (Grade VII) and the usual methods of classroom instruction. (3) It analyzes the composition elements of certain scenes of the talking pictures used in the experiment. (4) It suggests a program of research in the fields of curriculum construction and educational sound pictures.

The results of this study "indicate that the talking pictures used in the experiment made distinct contributions to learning in both natural science and music" (p. 37). This conclusion also applies to selected groups of pupils of both low and high intelligence levels. The results of delayed-recall tests show that the gains made by the experimental groups were statistically significant and were more lasting than the gains made by the control groups. Apparently, the

[1] Varney C. Arnspiger, *Measuring the Effectiveness of Sound Pictures as Teaching Aids*. Teachers College Contributions to Education, No. 565. New York: Teachers College, Columbia University, 1933. Pp. viii+156. $2.00.

value of the talking pictures was based on the excellence of the subject matter presented in the film which classroom teachers did not present effectively by other methods.

Consideration of the effectiveness of various factors suggests that the proper integration of audio-visual elements, a generous use of the "close-up" focal length, excellent lighting of scenes, and a judicious use of repetition contribute to the production of an effective educational film. It is to be regretted that little evidence of the value of sound effects is presented, since talking pictures should be especially efficient in this respect as compared with silent pictures and with other methods of presentation. However, it is stated that this experiment gives no proof that sound other than speech produces superior results unless it is used to present concepts which directly involve such sound.

In conclusion several suggestions for future development, such as the use of sound pictures in curriculum expansion, are proposed. Since the sound picture can combine the inherent advantages of the telescope, the microscope, and the motion-picture camera with sound-recording and sound-amplifying devices so as to secure slow motion, photography showing lapse of time, animation, sound effects, etc., it greatly extends the limits of the senses. For this reason, clarification of new concepts through this medium is not dependent on knowledge of the "tool subjects." Therefore, the sound motion picture holds out a unique challenge to those who are responsible for the construction of the curriculum.

Since this is a Teachers College research publication, the type of binding, size of print, and the general organization of this book will be familiar to most readers. The experiment reported is undoubtedly one of the best in the field of educational sound pictures to date.

WILLIAM F. EINBECKER

DEERFIELD SHIELDS HIGH SCHOOL
HIGHLAND PARK, ILLINOIS

Case studies of temporarily maladjusted high-school girls.—The importance of the case-study method is being increasingly recognized in work with individuals, and rightly so, because there is no other technique that gives so complete and unified a pattern of the physical, mental, social, moral, and economic aspects of a personality.

Miss Smithies' book of case studies[1] is the most comprehensive, certainly the most detailed, and in many ways the most useful contribution to the study of temporarily maladjusted high-school girls which has appeared. Beginning with a discussion of fundamental principles of pedagogical case work—that case studies should be continuously compiled for *all* pupils in the school, that data should be checked, and that every source of relevant information should be explored—the book ends with a brief and illuminating account of some of the most common problems of high-school girls. The bulk of the book consists in eleven

[1] Elsie M. Smithies, *Case Studies of Normal Adolescent Girls*. New York: D. Appleton & Co., 1933. Pp. x+284. $2.00.

case studies, each study representing a different type of emotional, physical, educational, or environmental difficulty. Each study includes a statement and an interpretation of the facts in the case, a diagnosis of the problem, and a description of the partial results of the process of re-education used. As a guide in collecting significant information, Miss Smithies offers an admirable outline, which she has tested over a period of ten years.

Although the vast majority of high schools fall far below the standard set by Miss Smithies' case studies, the latter fall below the ideal pedagogical case history in two respects: (1) The class median, which is given with great care in the discussion of the results of achievement tests, is omitted, with one exception, in the case of intelligence quotients. An accurate diagnosis of educational difficulties requires knowledge of the relation between the intelligence of an individual and the mental ability of his school peers. (2) A trained psychologist might object to the occasional drawing of conclusions from standardized tests administered under special conditions.

The task of interpreting, weighing, and unifying the evidence collected is rendered extremely difficult by the present inadequate knowledge of antecedents and consequences in behavior and by the complex reciprocal relations among factors influencing personality. The reader of the case studies in this book sometimes questions whether the "causes" labeled "primary" are not essentially incidental factors and whether sufficient weight has been given to the importance in pupil adjustment of mental ability below the average of the group.

In addition to suggesting to guidance officers, teachers, parents, and social workers kinds and sources of significant data, Miss Smithies' book discloses problems of diagnosis for further investigation and demonstrates the need for a more "critical scrutiny and interpretation of the evidence found in each field covered in the history" and more rigorous thinking in the discovering of "the logical relation of each fact to the other" and in "the weighing of their mutual values" (p. 23).

RUTH STRANG

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Health education.—There is little well-written material in the field of health education suited to the needs of the secondary school. The authors of the material written in the past attempted to create habits and to state various health dogmas but gave little attention to instruction in the scientific health facts. It is gratifying to find in a book on health[1] a decided departure from this old idea.

The teaching of physiology as a means of fitting pupils for a better understanding has proved entirely inadequate. The attention of the adolescent boy and girl can only be secured by something vital and factual. This volume presents sufficient fresh scientific material concerning health problems to serve the needs of the secondary school.

[1] Josephine L. Rathbone, Francis L. Bacon, and Charles H. Keene, *Foundations of Health.* Boston: Houghton Mifflin Co., 1932. Pp. xx+414. $1.56.

The content is organized into two parts and is presented by the unit plan. The units in Part I deal with the meaning of good mental and physical health, human adjustments, the nutritional needs of the body, how the body makes use of its food, the circulation of the blood, the respiratory system, the excretory system, the regulating systems, the effects of physical exercise on the structure and health of the body, why the body needs rest and recreation, the effects of narcotics and alcohol. In Part II the units deal with the physical examination, care of the body, following up the health examination, maintaining good health, community health, and first aid.

At the end of each unit appears a list of problems and projects which are of interest and value in organizing and presenting the material. There is also included at the end of each unit a suggested bibliography for supplementary reading. This suggested bibliography has been selected, for the most part, with considerable care. The book is illustrated in a way which makes the material interesting and effective. Teachers in physical education will find the material easy to adapt for class work and suggestive in outlining a course of study. The authors attempted to cover a wide range of subject matter, and because of this attempt the presentations of many important subjects are entirely too brief. It is regrettable that some of the problems of sex were not presented. It would seem that, following the same policy of presenting scientific facts on other subjects, the authors might have approached this important problem.

The book is a welcome contribution to the all-too-meager list of good publications at this particular level.

L. B. SHARP

The function of poetry in the curriculum.—Two recently published anthologies of poetry adequately represent contrasting views of the function of literature in the curriculum. The first[1] assembles English and American poetry in sixteen groupings, the titles of which are rather miscellaneous. Not systematically arranged according to any one principle, the groupings, the editor tells us, have been suggested by mood or subject matter or occasionally by historical considerations, in the belief that such an arrangement has a natural and lively interest and leads to a better understanding of the poems included. This organization is illustrative of the educational theory that literature is to be studied for intrinsic values as literature.

The second anthology[2] very frankly groups the poems in chapters and subdivisions which parallel the chronological development of the nation. "The great events of American history cannot be retold too often. . . . . So with the principles upon which the Republic was founded and the ideals which have grown up about it. . . . . No nation exists today of which its people have a better

[1] *Off to Arcady:* Adventures in Poetry. Edited with Introduction, Notes, and Study Suggestions by Max J. Herzberg. Chicago: American Book Co., 1933. Pp. 504. $1.00.

[2] *American History in Verse:* For Boys and Girls. Collected and edited by Burton Stevenson. Boston: Houghton Mifflin Co., 1932. Pp. xviii+456+xxiv. $1.32.

right to be proud than these United States. This book is an effort to show why this is so" (p. v). Part I, "The New World," includes four chapters: "The Greatest Voyage in History," "The Virginia Colony," "The Pilgrims and the Puritans," and "The Struggle for the Continent." The organization used by Stevenson illustrates the educational theory that literature may be studied profitably on the basis of functional value, that is, the interpretation it carries of the life of the people from whom it emanates.

The reviewer expresses no preference for either educational theory. Apparently the trend of practice today is to stress the *functional* or interpretative values of literature in the junior high school grades and to teach the intrinsic literary values in the senior high school grades. With this distinction in mind, it is fair to say that Stevenson's anthology is apparently suitable for Grades VI–X, inclusive, while the placement of Herzberg's is seemingly in Grades IX–XII, inclusive. *Off to Arcady* has the highly commendable feature of including a large percentage of modern verse. It includes many teaching aids and devices, quite appropriate to the idea that poems are to be studied. *American History in Verse* is quite free from pedagogical paraphernalia. A few explanatory notes included in the volume are appropriate to the idea that poems are to be read and interpreted.

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